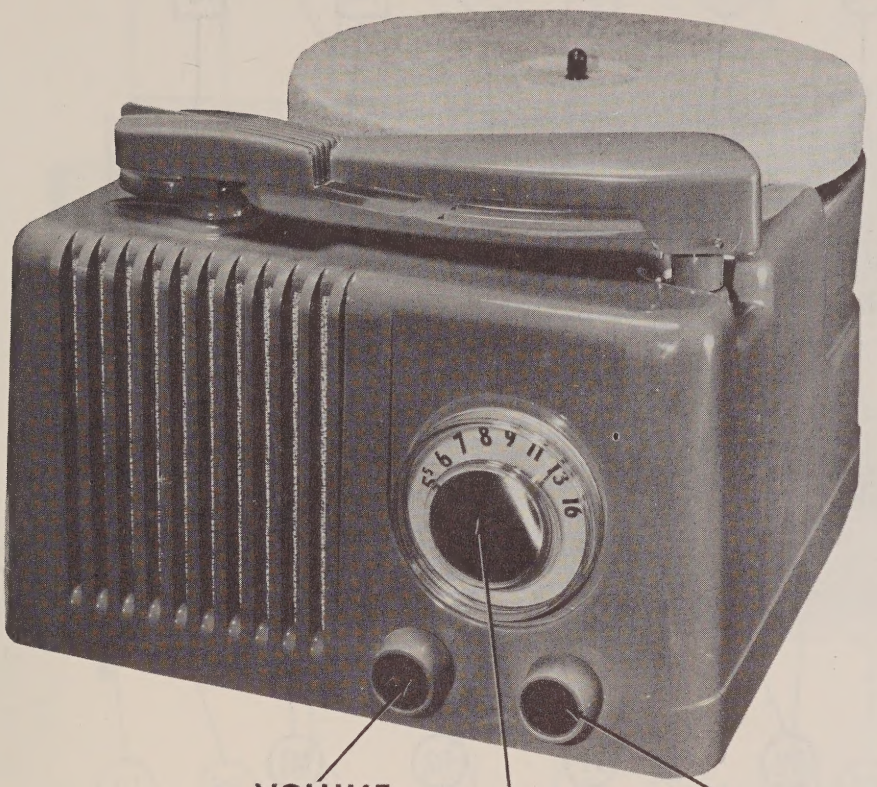
CONTENTS

TRADE NAME	MODEL	SET AND FOLDER No.
Airline	25GSL-2000A	199-1
Bell Sound	2122B	199-2
Bendix	753F, M, W (Ch. C-19)	199-3
CBS Columbia	21C11, B, 21C21, 21C31B, 21C41, 21T11, (Ch. 1021) Tel. Rec.	199-4
Coronado	25TV2-43-9045A, B, 25TV2-43-9060A Tel. Rec.	199-5
General Electric	614, 615	199-6
Philco	53-960	199-7
Pilot	AA-901, PA-911	199-8
RCA Victor	2-X-621 (Ch. RC-1085B)	199-9
Sentinel	1U-458, 1U-459, 1U-460, 1U-461 Tel. Rec.	199-10
Silvertone	3106 (Ch. 132.045, -1) Tel. Rec.	199-11
Stromberg-Carlson	AR-425	199-12
Sylvania	C32M (Tel. UHF Conv.)	199-13
Truetone	D-2108A, D-2109A	199-14
Truetone	D-2383	199-15

AIRLINE
MODEL 25GSL-2000A

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

AIRLINE
MODEL 25GSL-2000A



AIRLINE
MODEL 25GSL-2000A

TRADE NAME	Airline Model 25GSL-2000A
SUPPLIER	Montgomery Ward & Co., 619 Chicago Ave., Chicago, Ill.
TYPE SET	AC Operated Radio-Phono Combination Superheterodyne Receiver with 3 Speed Manual Record Player
TUBES (Four)	Types 12AU6 Conv., 12AV6 Det.-AVC-AF Amp., 50C5 Audio Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC-60 Cycle — RATING .23 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1600 KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning capacitor fully closed and set pointer parallel with base of dial. Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.05MFD	High side to rear stator plates on tuning gang. Low side to B-.	455KC (400%Mod)	Point of non-interference	Across voice coil	A1, A2	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001 MFD to reduce hum modulation.
2.	"	"	1620KC	Tuning gang fully open	"	A3	Adjust for maximum output.
3.		Loop	1400KC	Tune for maximum signal	"	A4	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: AIRLINE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	INSTALLATION NOTES
V1	Converter	12AU6	12AU6	7BK	
V2	Det.-AVC-AF Amp.	12AV6	12AV6	7BT	
V3	Audio Output	50C5	50C5	7CV	
V4	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AIRLINE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	50	150	N-8890	PRS150/50-30-20		EDL5315C		TN129	TVA-3430	Blue
B	20	150								Red
C	20	15								Green
C2	50		N-6385	SI50	D6-500	TM5Q5	GP1K-500	UC-545	5GA-Q5	
C3	100		N-6015	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C4	.003	600	N-2063	P688-003	D6-302	PTE6D3	GP2-333-302	PT623	6TM-D3	
C5A	.005									
B	250		♦N-8215		♦PC-71		♦1406-02		♦104C5	
C										
C6	.01	400	N-1344	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C7	.05	400	N-1346	P488-05	DF-503	PTE4S5		PT415	4TM-S5	
C8	.08	200	N-8092							

♦ Items C5A, C5B, C5C, R6A, R6B are combined in one unit.
When replacing items separately C5B and C5C should total 250MMF
Some Models use separate items C5A part #N-4894, C5B part #N-6488 and C5C not used.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRLINE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	2Meg	½	N-8854	Q13-139	AG-66-Z	AB-76	U-55	Volume
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R1A
C	Switch		Not Req.	76-1	SWB	KB-1	US-26	Attach to R1A

RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: AIRLINE PART No.	IRC PART No.	NOTES
R2	2.2Meg	½	N-4277	BTS-2.2Meg	
R3	1Meg	½	N-1262	BTS-1Meg	
R4	1Meg	½	N-1262	BTS-1Meg	
R5	6.8Meg	½	N-4028	BTS-6.8Meg	
R6A	250KΩ	½	♦N-8215		
B	500KΩ	½			

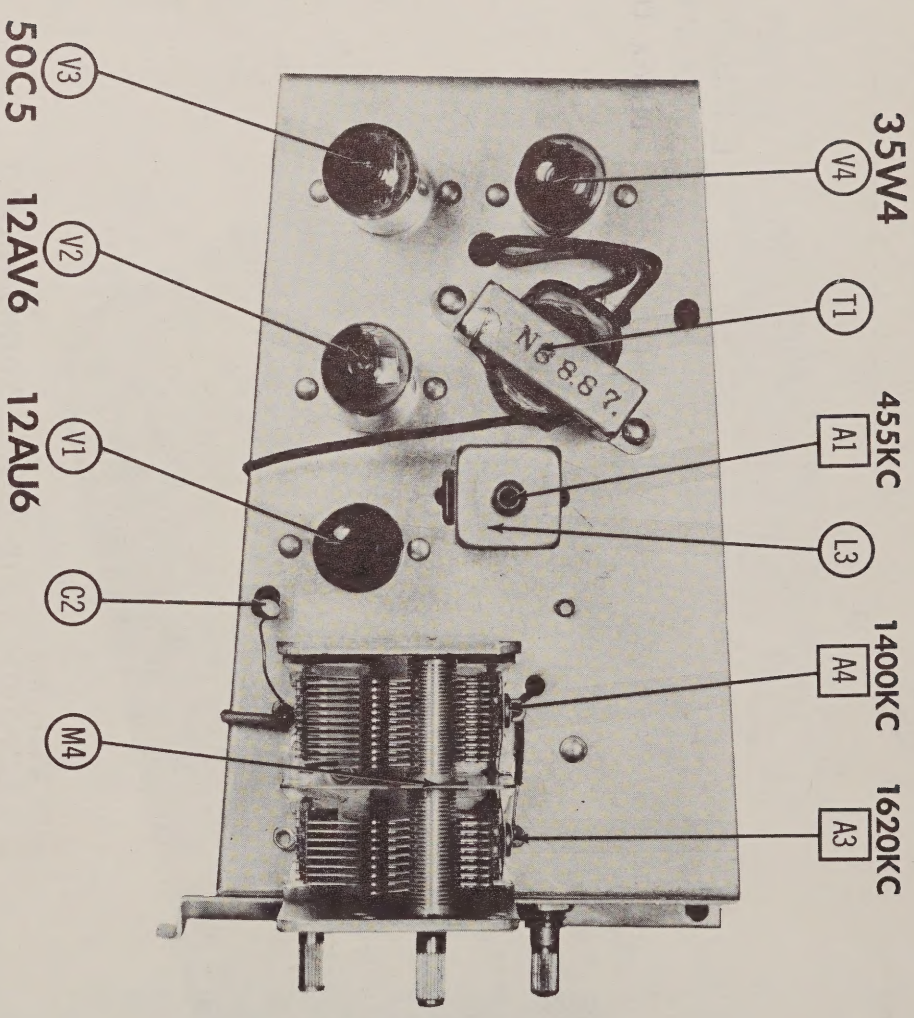
ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: AIRLINE PART No.	IRC PART No.	NOTES
R7	180Ω	½	N-4067	BTS-180	
R8	2200Ω	½	N-4896	BTS-2200	
R9	33Ω	½	N-4022		
R10	68Ω	2	N-6014		

♦ Items R6A, R6B, C5A, C5B, C5C are combined in one unit.
Some Models use separate items R6A part #N-4026, R6B part #N-4027.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: AIRLINE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T1	2.75KΩ	3.3Ω	214Ω	.54Ω	N-8887	A-3332	A-3025	RO-301 ①	S-1X ①	① Drill one new mounting hole.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	AIRLINE PART No.	JENSEN PART No.	QUAM PART No.	
SP1	4"	PM	3.3Ω	N-8679	ST-113 Mod. P4-X	4A07	

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	AIRLINE PART No.	MILLER PART No.	
L1	Loop Ant.	.4Ω	1.6Ω	N-8850		
L2	Osc. Coil	1Ω	7.5Ω	N-8552	71-OSC *	* Drill mounting hole
L3	IF Trans.	28Ω	28Ω	N-7694		Pri. winding tapped @ 1Ω

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA							REMARKS
	AIRLINE PART No.	ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1	GC-AG-M	GC-AG-J	G-AG	WC36B	A56U	43 *2400	0-2 or S-2	* Tone Arm

ASTATIC, SHURE AND ELECTRO-VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THEIR RESPECTIVE REPLACEMENT CARTRIDGES LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENT SEE BELOW.

PHONO NEEDLE

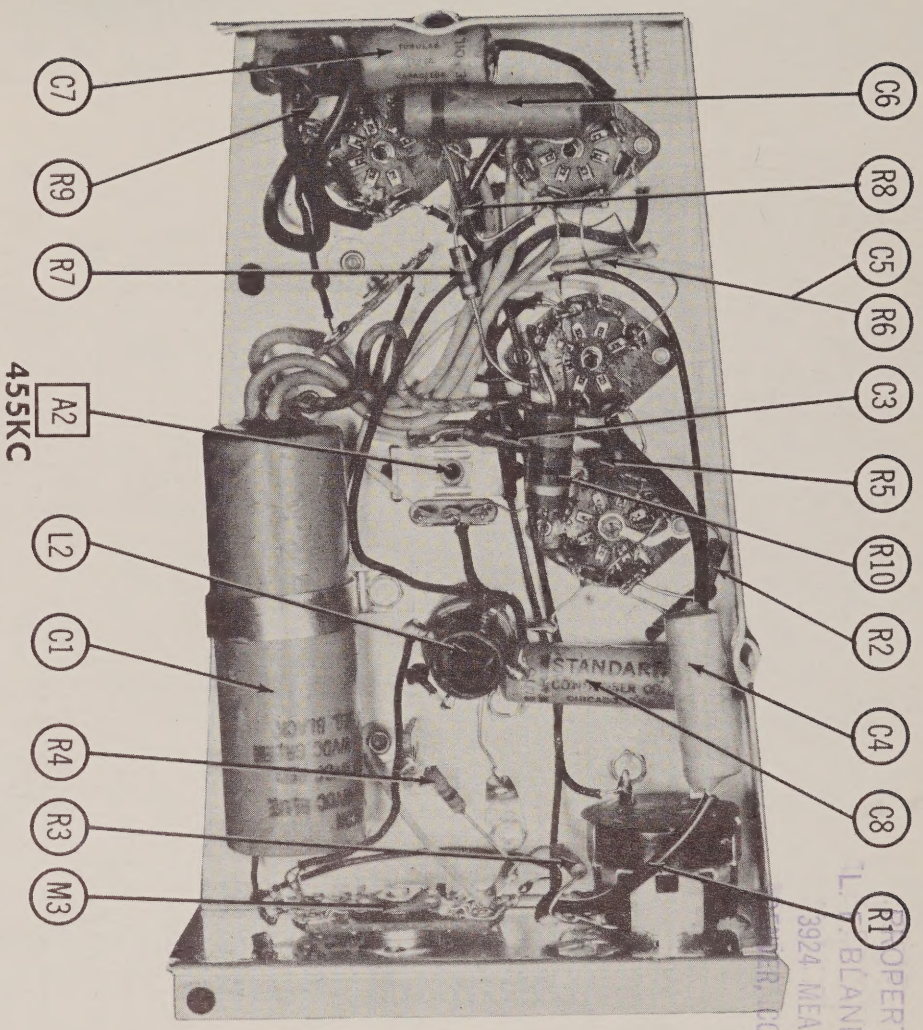
(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA			REMARKS
	AIRLINE PART No.	WALCO PART No.	JENSEN PART No.	
M2	G-AG	W-3AGA or W-3AGS	A-742 or A-842	

MISCELLANEOUS

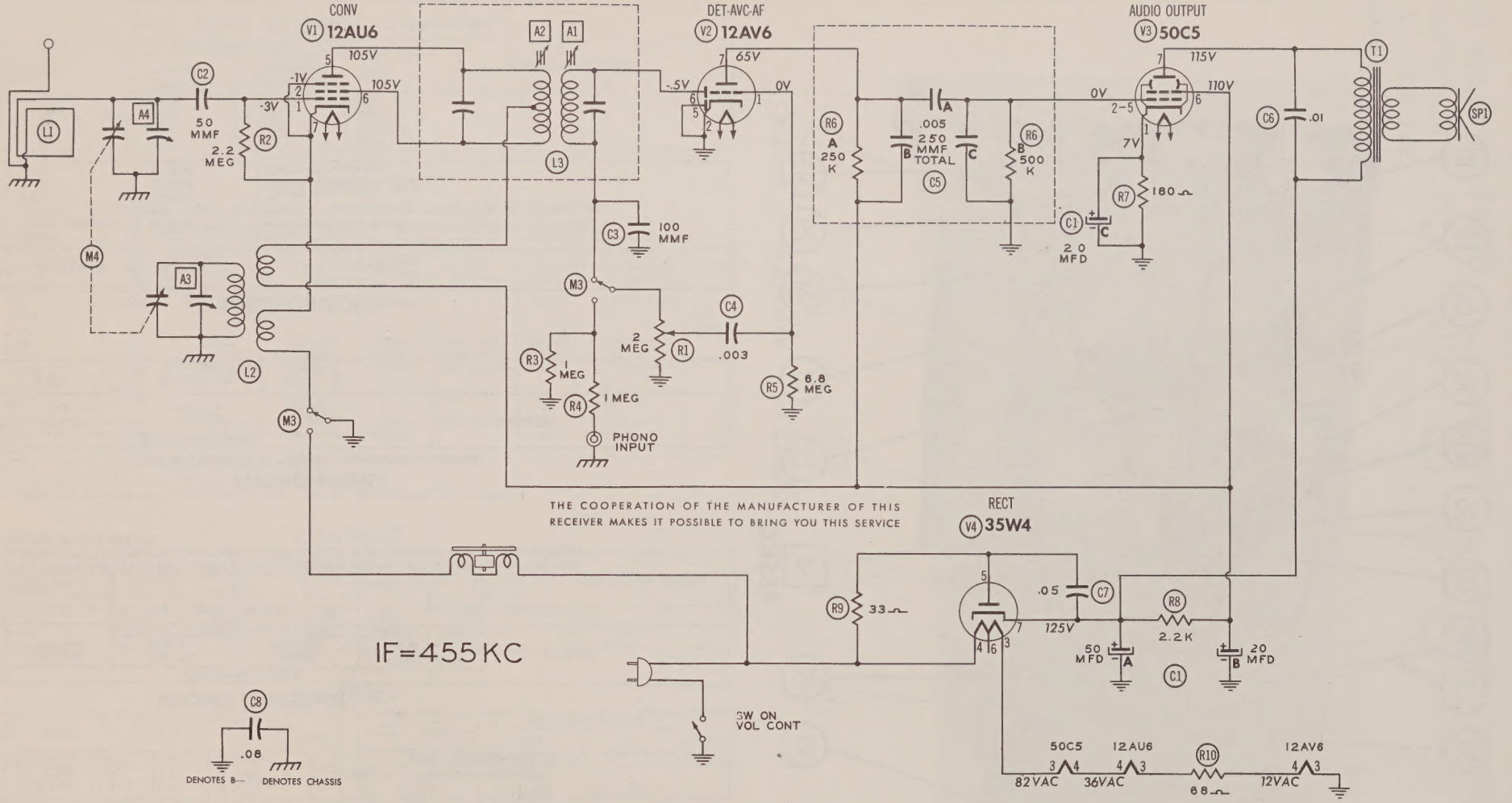
ITEM No.	PART NAME	AIRLINE PART No.	NOTES
M3	Switch		Radio-Phono
M4	Tuning Capacitor	N-8551	8-364MMF, 9-100MMF
	Cabinet	387	Plastic
	Knob	N-8430	Tuning
	Knob	N-8855	Off/On -Volume
	Knob	N-8855	Radio-Phono Switch

CHASSIS—BOTTOM VIEW



PROPERTY OF
L. B. BLANKENSHIP,
3924 MEADE ST.
DENVER, COLORADO

AIRLINE
MODEL 25GSL-2000A



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12AU6	2.2Meg	2.6Ω	80Ω	95Ω	†2.2KΩ	†2.2KΩ	2.6Ω
V 2	12AV6	6.8Meg	0Ω	0Ω	12Ω	0Ω	2Meg	†220KΩ
V 3	50C5	180Ω	500KΩ	150Ω	95Ω	500KΩ	†2.2KΩ	†214Ω
V 4	35W4	0Ω	INF	150Ω	180Ω	200Ω	170Ω	30KΩ

† MEASURED FROM PIN 7 OF V4.

PHOTOFACT STANDARD NOTATION SCHEMATIC

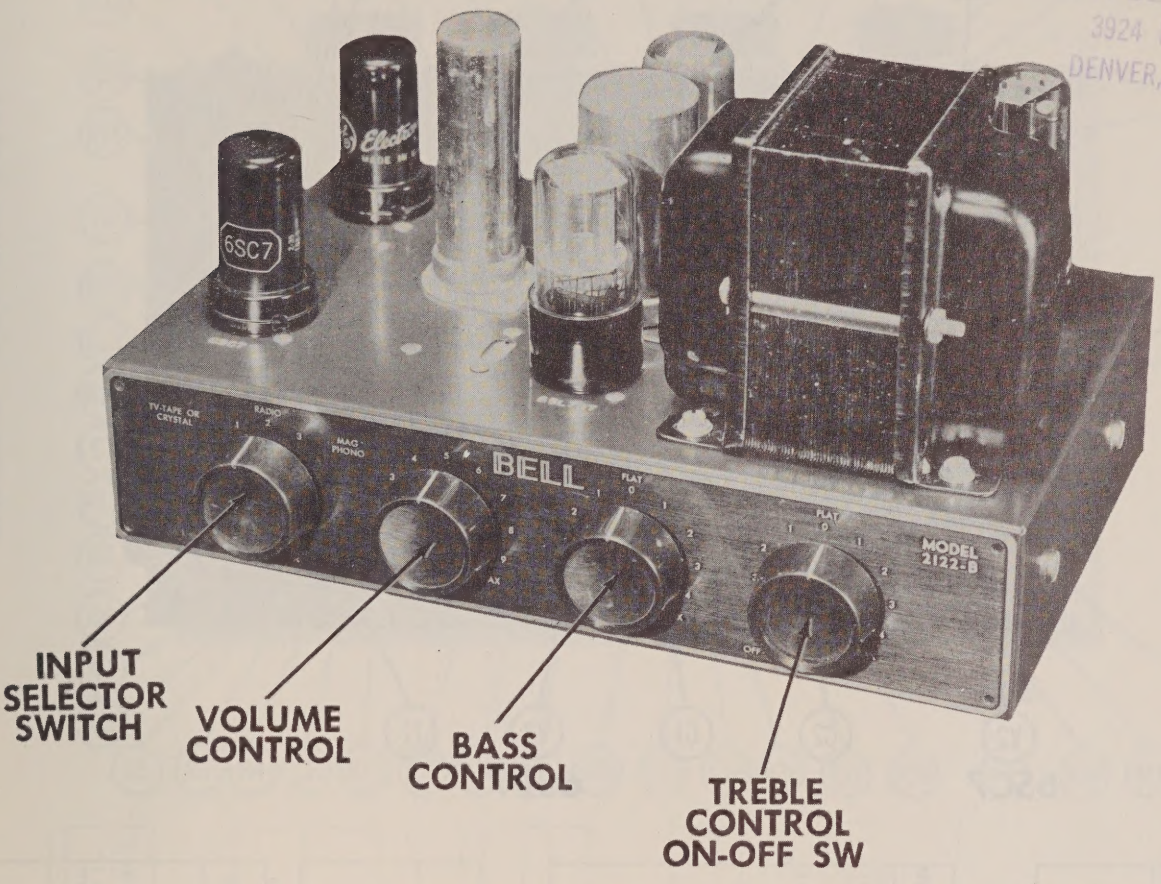
© Howard W. Sams & Co., Inc. 1953

199-1

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

BELL SOUND
MODEL 2122B



BELL SOUND
MODEL 2122B

TRADE NAME	Bell Sound Model 2122-B	
MANUFACTURER	Bell Sound Systems, Inc., 555 Marion Rd., Columbus, Ohio	
TYPE SET	AC Operated 4 Channel Audio Amplifier	
TUBES (Six)	Types 6SC7 Pre-Amp., 6SC7 AF Amp., 6SL7 AF Amp.-Phase Inv., (2) 6V6GT Audio Output, 5Y3GT Rectifier	
POWER SUPPLY	110-120 Volts AC	RATING .63 Amp. @ 117 Volts AC

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: Bell Sound PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	INSTALLATION NOTES
V1	Pre Amplifier	6SC7	6SC7	8S	
V2	AF Amplifier	6SC7	6SC7	8S	
V3	AF Amplifier-Phase Inverter	6SL7 GT	6SL7GT	8BD	
V4	Audio Output	6V6GT	6V6GT	7S	
V5	Audio Output	6V6GT	6V6GT	7S	
V6	Rectifier	5Y3GT	5Y3GT	ST	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: Bell Sound PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	▲30	450		AFH3-131		C102		FP396	TVL-3741	Note 1.
B	■30	450								Note 1.
C	▲20	25								Note 1.
C2A	▲20	450		AFH3-129		CO99		FP345.8	TVL-3739	
B	■20	450								
C	50	50								Note 2.
C3	10	25		PRS25/10		BR102A		TC22	TVA-1204	
C4	.25	200		P488-25		PTE4P25		PT4025	4TM-P25	
C5	10000			BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C6	.0033	600		P688-0033	D6-332	PTE6D33	GP2-333-332	PT6233	6TM-D33	
C7	270	500		1468-0003	D6-271	5W5T3	GP2K-271	MC241	1FM-33	
C8	.05	600		P688-05	DF-503	PTE6S5		PT615	6TM-S5	
C9	.022	400		P488-022	DF-203	PTE4S22		PT4122	4TM-S22	
C10	200	500		1468-0002	D6-201	5W5T2	GP2K-201	MC237	1FM-32	
C11	.002	600		P688-002	D6-202	PTE6D2	GP2-333-202	PT622	6TM-D2	
C12	.001	600		P688-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	
C13	.01	400		P488-01	D6-103	PTE4S1	GP2-333-10	PT4I1	4TM-S1	
C14	.05	600		P688-05	DF-503	PTE6S5		PT615	6TM-S5	
C15	.05	600		P688-05	DF-503	PTE6S5		PT615	6TM-S5	
C16	.001	600		P688-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	
C17	.05	600		P688-05		PTE6S5		PT615	6TM-S5	

Note 1: Some models use 40MFD in this application.
Note 2: Some models use 20 MFD in this application.

CONTROLS

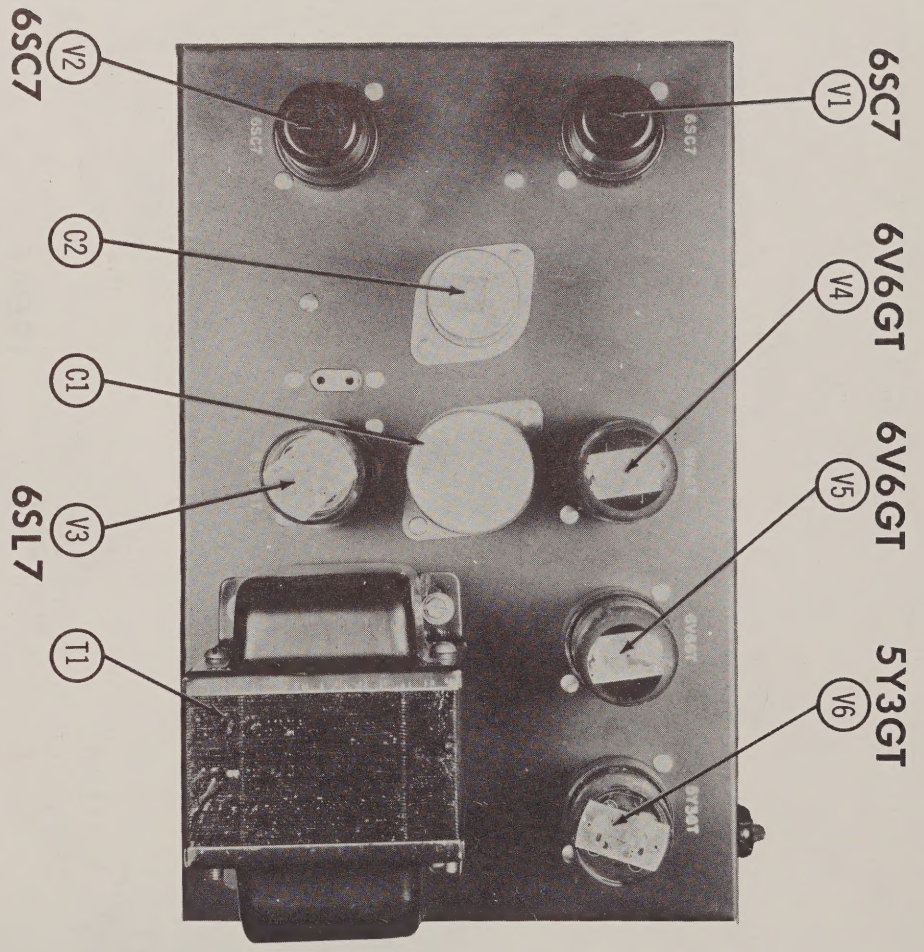
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: Bell Sound PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	100KΩ	½	B20066P105	Q13-128	AG-51-Z	B-41	U-39	Volume
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R1A
R2A	2Meg	½	B20066P102	Q13-139	AG-66-Z	B-76	U-55	Bass
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R2A
R3A	2Meg	½	B20066P103	Q13-139	AG-66-Z	B-76-S	U-55	Treble
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R3A
C	Switch		Not Req.	76-1	SWB	Not Req.	US-26	Attach to R3A

RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: Bell Sound PART No.	IRC PART No.	NOTES
R4	27KΩ	½		BTS-27K	
R5	150KΩ	½		BTS-150K	
R6	47KΩ	½		BTS-47K	
R7	470KΩ	½		BTS-470K	
R8	10Meg	½		BTS-10Meg	
R9	27KΩ	½		BTS-27K	
R10	68KΩ 5%	½		BTS-68K 5%	
R11	10Meg	½		BTS-10Meg	
R12	27KΩ	½		BTS-27K	
R13	470KΩ	½		BTS-470K	
R14	390KΩ	½		BTS-390K	
R15	100KΩ	½		BTS-100K	
R16	1000Ω	½		BTS-1000	
R17	100KΩ	½		BTS-100K	
R18	200KΩ 5%	½		BTS-200K 5%	

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: Bell Sound PART No.	IRC PART No.	NOTES
R19	20KΩ 5%	½		BTS-20K 5%	
R20	27KΩ	½		BTS-27K	
R21	3600Ω 5%	½		BTS-3600 5%	
R22	2200Ω	½		BTS-2200	
R23	47Ω	½			
R24	130KΩ 5%	½		BTS-130K 5%	
R25	470KΩ	½		BTS-470K	
R26	130KΩ 5%	½		BTS-130K 5%	
R27	10KΩ	½		BTS-10K	
R28	270KΩ	½		BTS-270K	
R29	200Ω	5		1-3/4A-200	
R30	270KΩ	½		BTS-270K	
R31	3000Ω	1			
R32	100KΩ	2		BTB-100K	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA				
	PRI.	SEC. 1	SEC. 2	SEC. 3	Bell Sound PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T1	117VAC @ .63A	640VCT .110ADC	5VAC @ 2A	6.3VAC @ 2A	B-20166		P-3153	PV-120 ①	R-14A ①

① Drill new mounting holes

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		Bell Sound PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T2	6.3KΩ	16Ω tap @ 8Ω,4Ω	410Ω CT	1.18Ω tap @ .82Ω, .61Ω	B-20229	A-3880	A-3016		S-29X	

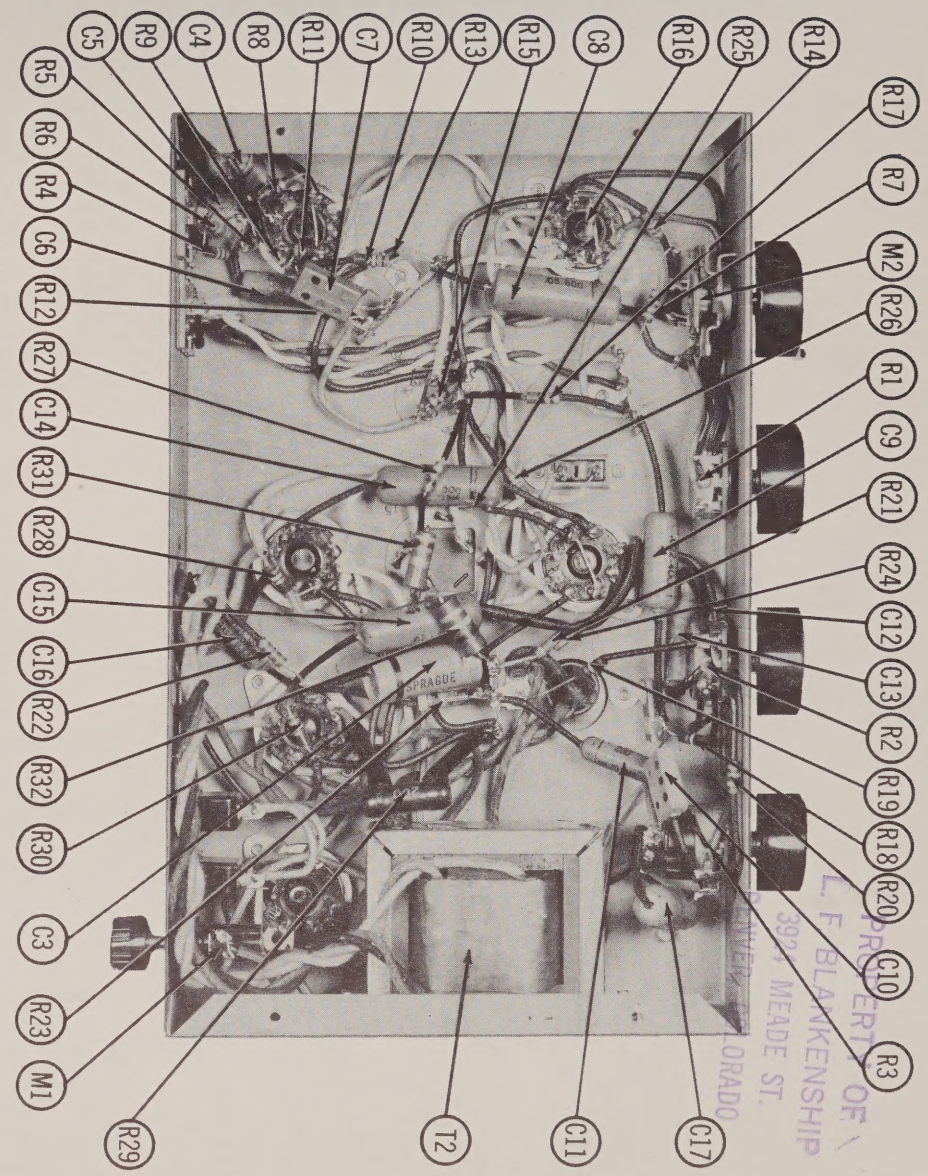
FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Bell Sound PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG	2Amp. 250V.			312002 (3AG-2A)	342001	AGC-2	HKP

MISCELLANEOUS

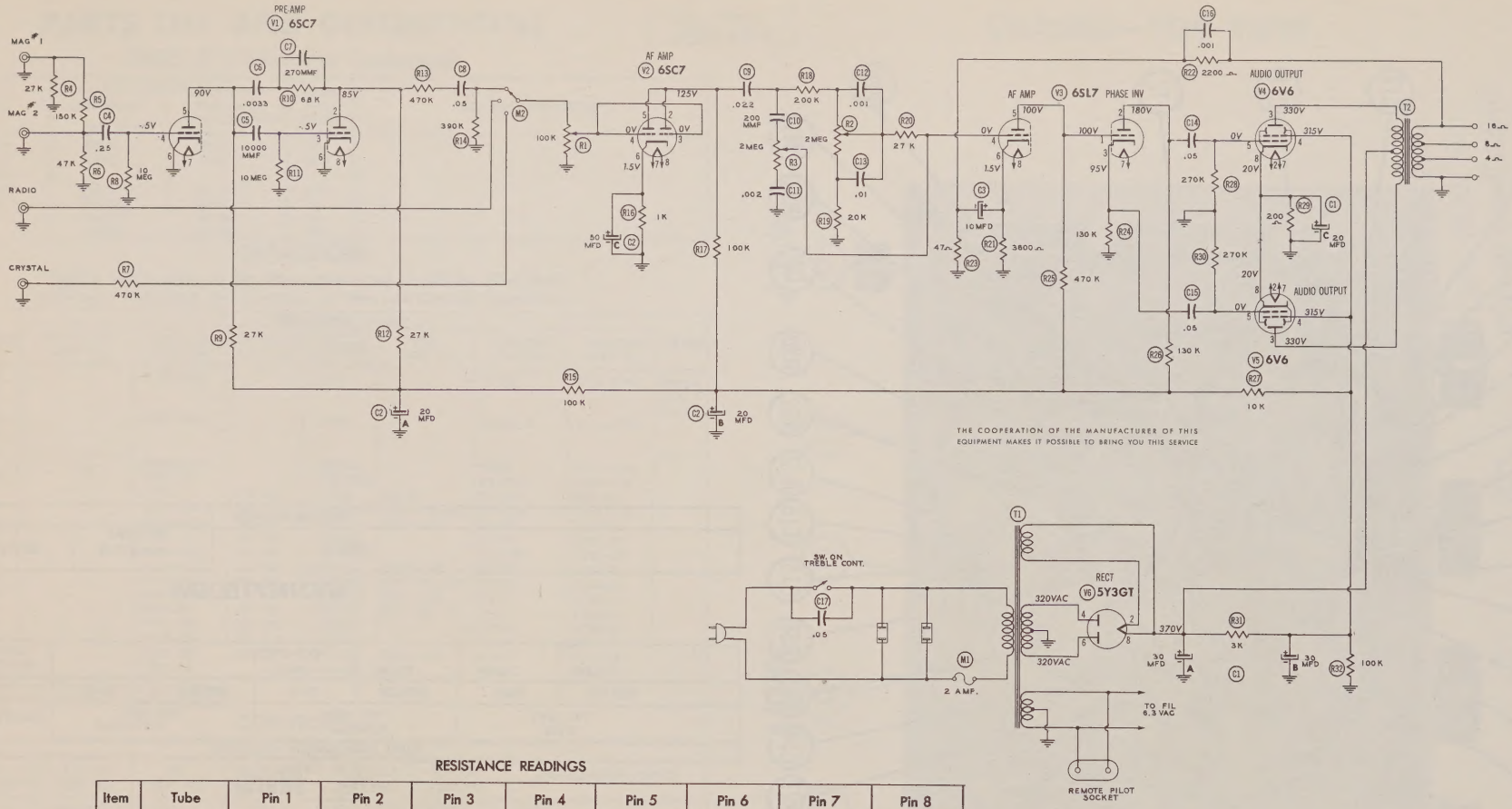
ITEM No.	PART NAME	Bell Sound PART No.	NOTES
M2	Switch		Function Selector

CHASSIS—BOTTOM VIEW



PROPERTY OF
L. F BLANKENSHIP
3927 MEADE ST.
DENVER, COLORADO

BELL SOUND
MODEL 2122-B



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SC7	0Ω	† 160KΩ	10Meg	10Meg	† 160KΩ	0Ω	.1Ω	.1Ω
V 2	6SC7	0Ω	† 130KΩ	0Ω	0Ω	† 130KΩ	1KΩ	.1Ω	.1Ω
V 3	6SL7	† 470KΩ	† 150KΩ	150KΩ	50KΩ	† 470KΩ	3.6KΩ	.1Ω	.1Ω
V 4	6V6GT	0Ω	.1Ω	† 200Ω	† 2.7KΩ	270KΩ	INF	.1Ω	200Ω
V 5	6V6GT	0Ω	.1Ω	† 200Ω	† 2.7KΩ	270KΩ	.1Ω	.1Ω	200Ω
V 6	5Y3GT	INF	100KΩ	INF	100Ω	INF	110Ω	INF	100KΩ

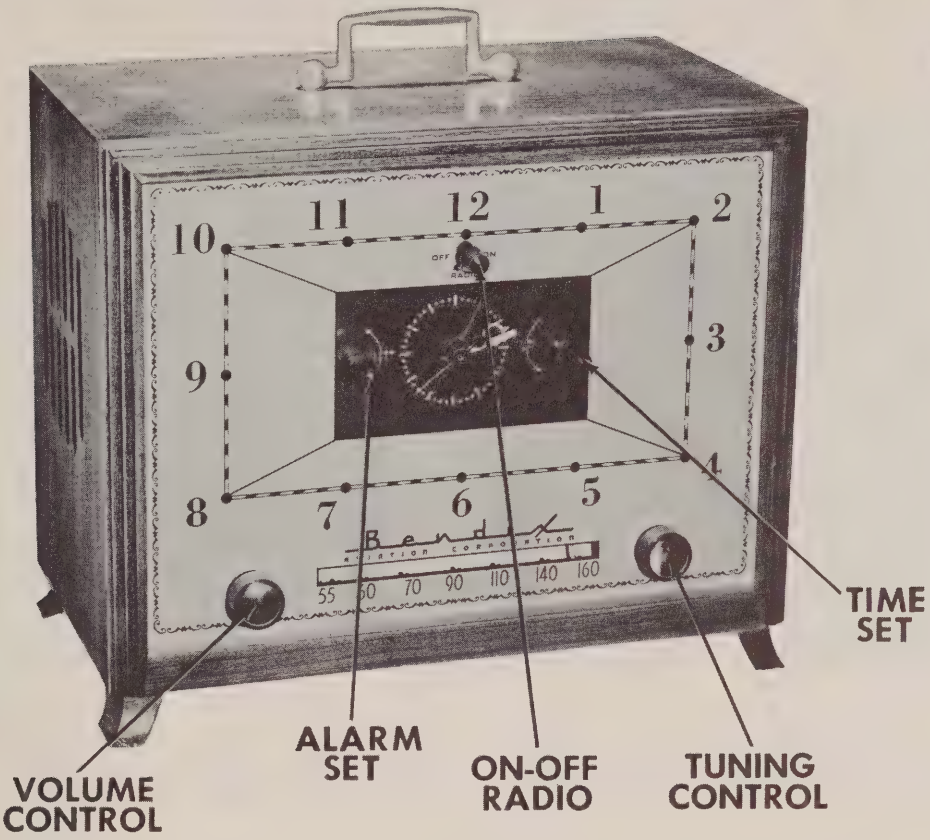
ALL MEASUREMENTS TAKEN IN MAGNETIC PHONO POSITION ONLY.
† MEASURED FROM PIN 2 OF V6.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
©Howard W. Sams & Co., Inc. 1953

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 Volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum , proper output load connected.

PROPERTY OF
U. S. SHIPBUILDING
DENVER, COLORADO

BENDIX MODELS
753F, M, W (Ch. C-19)



BENDIX MODELS
753F, M, W (Ch. C-19)

TRADE NAME	Bendix Models 753F, M, W (Ch. C-19)
MANUFACTURER	Bendix Radio, Div. of Bendix Aviation Corp., Baltimore, Md.
TYPE SET	AC Operated AM Superheterodyne Receiver with Electric Clock
TUBES (Five)	Types 12BE6 Conv., 12BA6 IF Amp., 12AT6 Det.-AVC-AF Amp., 50C5 Audio Output, 35W4 Rectifier
POWER SUPPLY	105-120 Volts AC - 60 Cycle — RATING .25 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1620 KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set dial pointer, set pointer to the extreme left hand calibration mark on dial back plate. Calibration marks reading left to right areas follows: "Reference", 580KC, 965KC, 1475KC and 1640KC.
Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-.
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.01MFD	High side to Pin 7 (grid) of 12BE6 (V1) Low side to B-.	455KC (400∿ Mod.)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.		Loop	1640KC (400∿Mod)	Extreme right-hand calibration mark	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		"	1475KC	Second calibration mark from right end of dial back plate.			

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	INSTALLATION NOTES
		BENDIX PART No.	STANDARD REPLACEMENT		
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amp.	12BA6	12BA6	7BK	
V3	Det-AVC-AF Amp.	12AT6	12AT6	7BT	
V4	Audio Output	50C5	50C5	7CV	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	BENDIX PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	40	150	CH267013-2	PRS150/50-50		EZ5515		2N521	TVA-2453	Blue Red
B	60	150								
C2	47	500	CM22A470M	1468-00005	D6-470	5W5Q5	GP1K-470		1FM-45	
C3	.05	400	CH267001-503	P488-05	DF-503	PTE4S5		PT415	4TM-S5	
C4	.006	600	CH267003-602	P688-006		PTE6D6	GP2-333-602	PT626	6TM-D6	
C5A	.005									
B	250		♦CH274249-1		♦PC-71		♦1406-02		♦104C5	
C										
C6	.02	400	Ch267001-203	P488-02	DF-203	PTE4S2		PT412	4TM-S2	
C7	.05	400	CH267001-503	P488-05		PTE4S5		PT415	4TM-S5	
C8	.1	400	CH267001-104	P488-1		PTE4P1		PT401	4TM-P1	

♦ Items C5A, C5B, C5C, R7A, R7B are combined in one unit.
When items are replaced separately, C5B and C5C should total 250MMF.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	BENDIX PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	500KΩ	½	CH262022-5	Q13-133	AG-60-Z	B-60	U-48	Volume
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R1A

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	BENDIX PART No.	IRC PART No.	
R2	22KΩ	½	RC23A223M	BTS-22K	
R3	3.3Meg	½	RC23A335M	BTS-3.3Meg	
R4	68Ω	½	RC23A680M		
R5	47KΩ	½	RC23A473M	BTS-47K	
R6	4.7Meg	½	RC23A475M	BTS-4.7Meg	

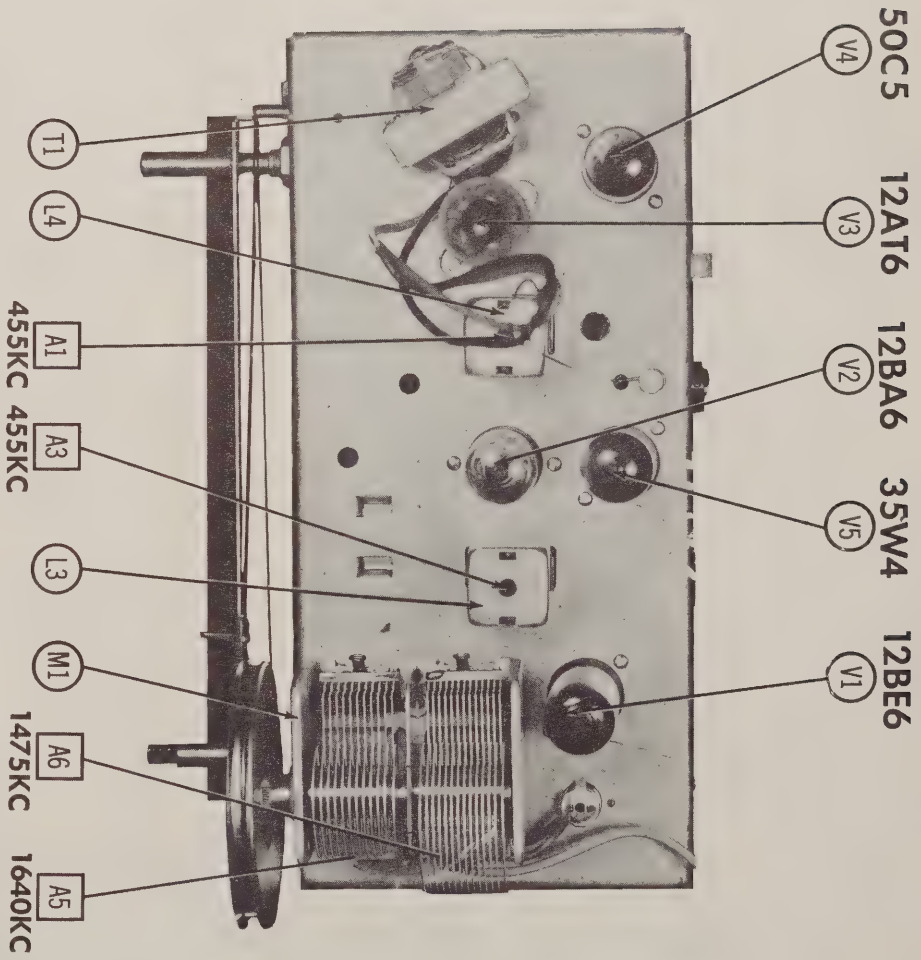
ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	BENDIX PART No.	IRC PART No.	
R7A	250KΩ	½	♦Ch274249-1		
B	500KΩ	½			
R8	150Ω	1	RC24A151K	BTA-150	
R9	1500Ω	2	RC25A152M	BTB-1500	
R10	22Ω	1	RC24A220M		
R11	220KΩ	½	RC23A224M	BTS-220K	

♦ Items R7A, R7B, C5A, C5B, C5C are combined in one unit.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		BENDIX PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T1	3KΩ	3.1Ω	238Ω tap ⓐ 16Ω	.74Ω	LH-265062-1	A-3330 ①	A-3031 ①	RO-3 ①		① Bend mounting tabs down, file out slots, mount on original mounting bracket.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

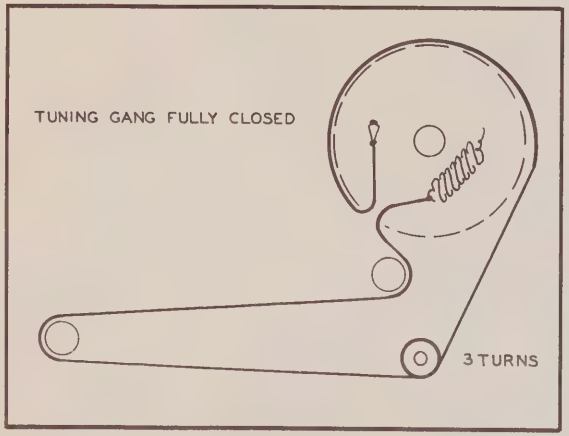
ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	BENDIX PART No.	JENSEN PART No.	QUAM PART No.	
SP1	4"	PM	3.1Ω	LH-256017-3	ST-113 Mod. P4-X	4A07	

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	BENDIX PART No.	MILLER PART No.	
L1	Loop Ant.	1.9Ω		LH251234-1		Includes cabinet back
L2	Osc. Coil	.5Ω	5.5Ω	LH259151-1	71-OSC	
L3	Input IF	14Ω	14.5Ω	CH259038-1	12-C1	
L4	Output IF	14Ω	14.5Ω	LH259152-1	12-C6	

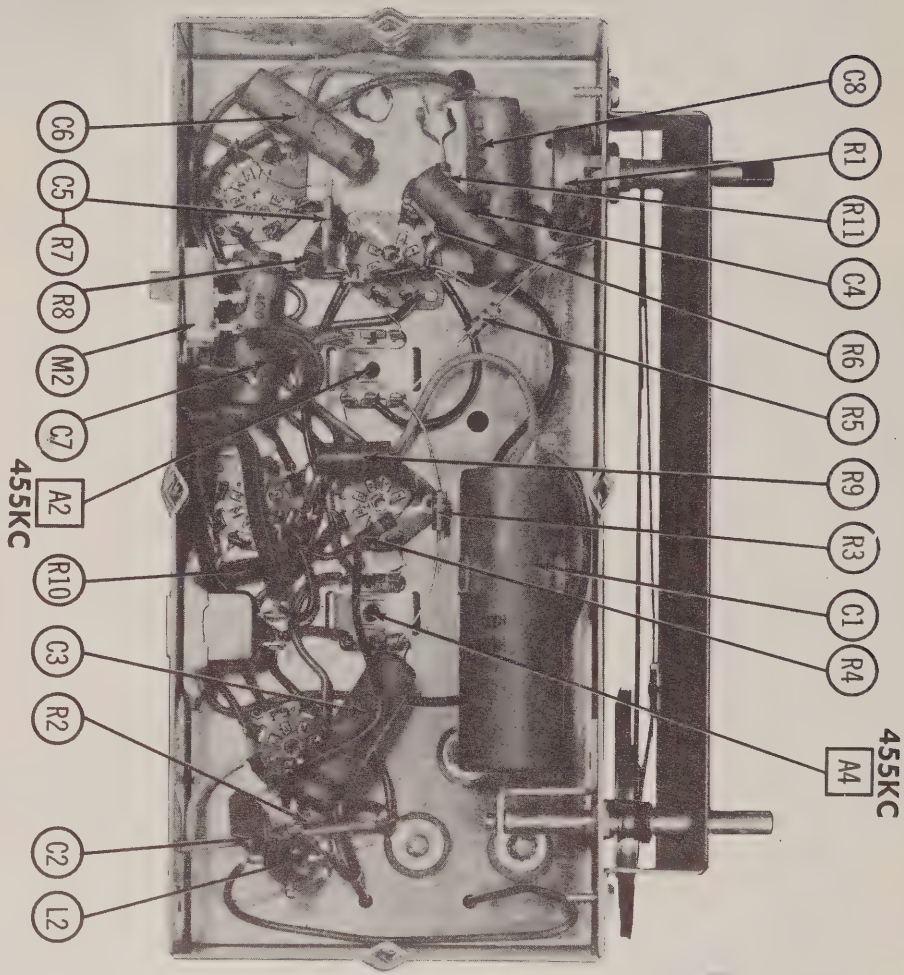
MISCELLANEOUS

ITEM No.	PART NAME	BENDIX PART No.	NOTES
M1	Tuning Capacitor	LH260016	36-468MMF, 28-178MMF
M2	Switch	AH258033	Radio On/Off switch
	Tuner Assy.	NH274248	Clock motor and switch
	Cabinet	RH255122-4	For Model 753F, cherry wood
	C abinet	RH255122-1	For Model 753M, Mahogany
	Cabinet	RH255122-3	For Model 753W, Blond
	Back	LH251234-1	Includes antenna loop
	Knob	LH269082-1	Volume, Tuning (2Used)
	Knob	CH269081-1	Clock (3 Used)
	Dial Glass	LH257636-1	

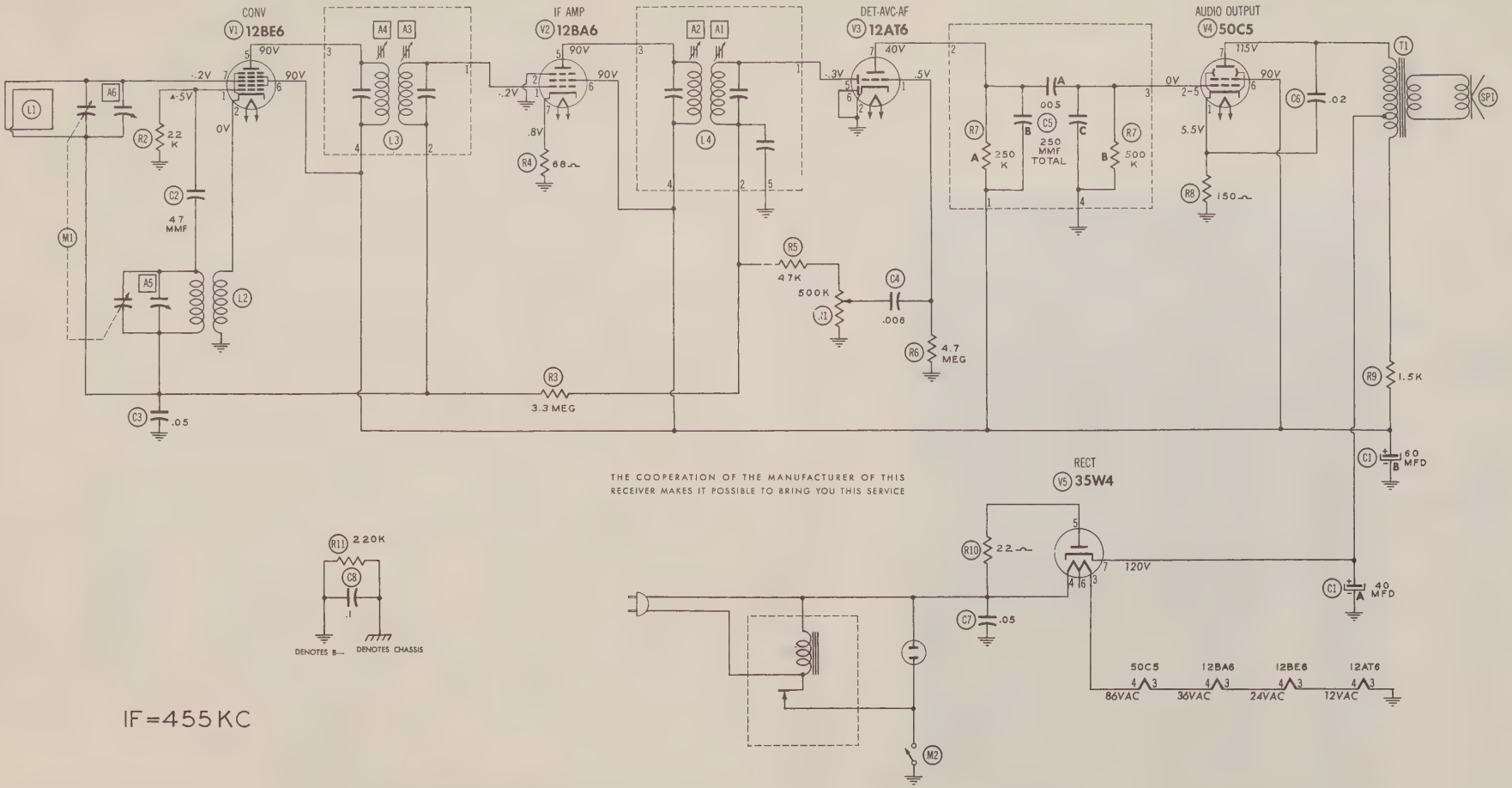


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



BENDIX MODELS 753F, M, W



THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

IF=455KC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	22KΩ	.5Ω	12Ω	24Ω	†1.5KΩ	†1.5KΩ	3.8Meg
V 2	12BA6	3.8Meg	0Ω	24Ω	36Ω	†1.5KΩ	†1.5KΩ	68Ω
V 3	12AT6	4.7Meg	0Ω	0Ω	12Ω	550KΩ	0Ω	†250KΩ
V 4	50L5	150Ω	500KΩ	36Ω	86Ω	500KΩ	†1.5KΩ	†200Ω
V 5	35W4	117Ω	500KΩ	86Ω	117Ω	140Ω	110Ω	500KΩ

† MEASURED FROM PIN 7 OF V5
▲ TAKEN WITH VACUUM TUBE VOLTMETER

A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1953

199-3

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PHOTOFACT* Folder

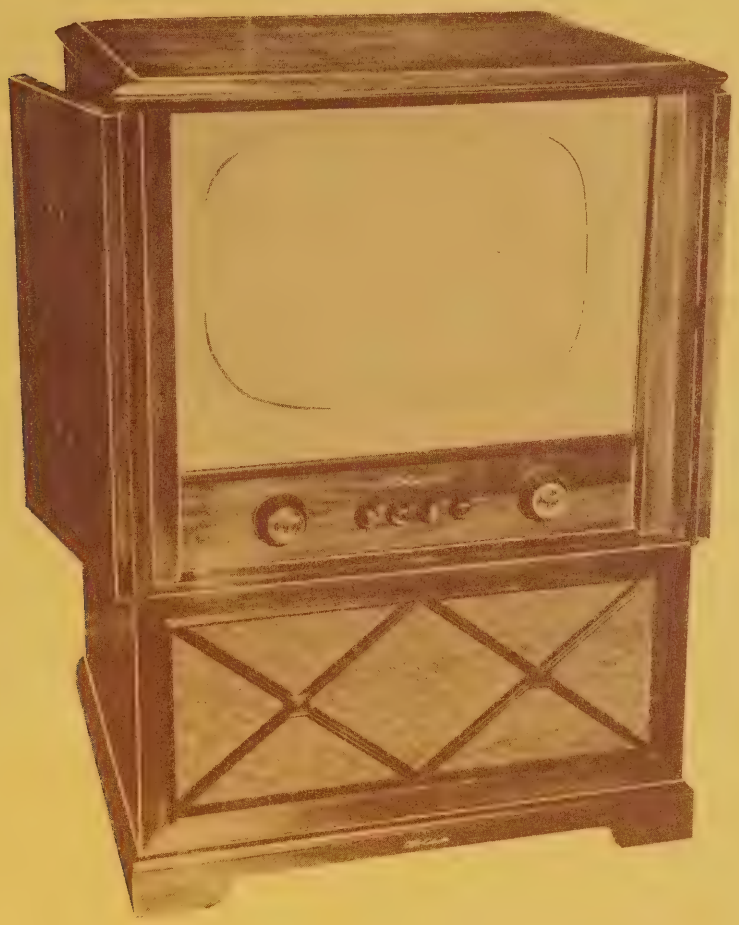
*TRADE MARK

CBS COLUMBIA MODELS 21C11, B, 21C21, 21C31B, 21C41, 21T11 (Ch. 1021)

IMPORTANT FILING NOTICE

The contents for this envelope will be found among the last folders in this complete set of folders . . . *unless* it has been purchased as part of a *complete* volume of PHOTOFACTS assembled in a DeLuxe Binder.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.



MODEL 21C21

CBS COLUMBIA MODELS 21C11, B, 21C21, 21C31B, 21C41, 21T11 (Ch. 1021)

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

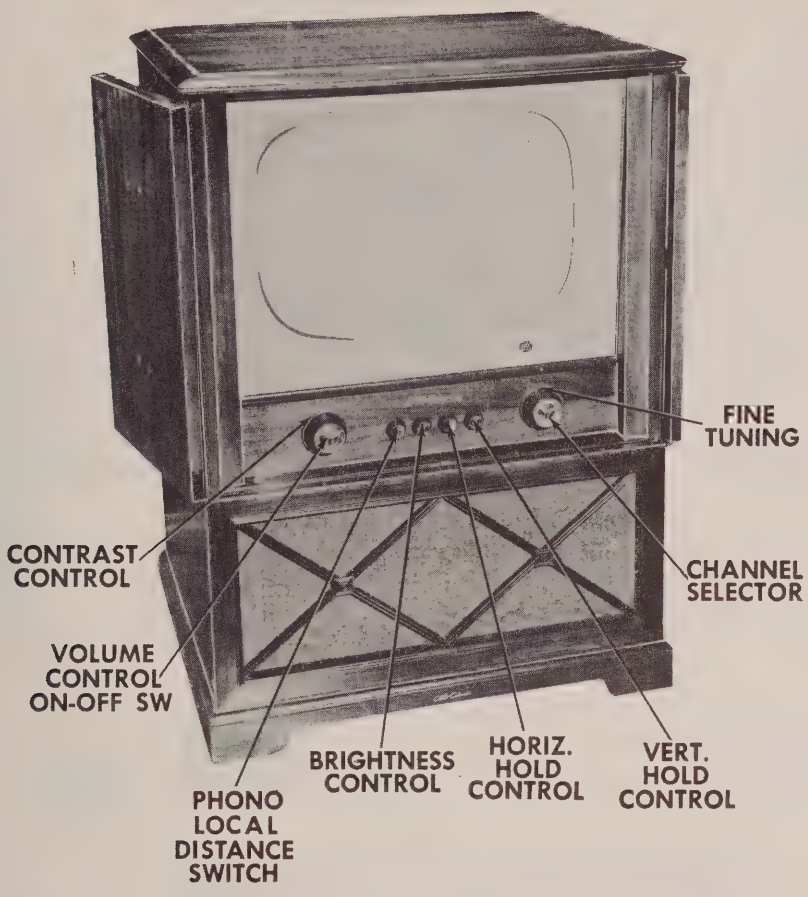
"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

DATE 4–53 SET 199 FOLDER 4

PHOTOFACT* Folder
*TRADE MARK

CBS COLUMBIA MODELS 21C11, B, 21C21, 21C31B, 21C41, 21T11 (Ch. 1021)

PROPERTY OF
L. F. [illegible]
3821 [illegible] ST.
DENVER, COLORADO



CBS - COLUMBIA MODEL 21C21

TRADE NAME	CBS-Columbia, Models 21C11, 21C11B, 21C21, 21C31B, 21C41, 21T11 (Ch. 1021)
MANUFACTURER	CBS-Columbia, 170- 53rd. St., Brooklyn 32, N.Y.
TYPE SET	Television Receiver
TUBES	Twenty-Five
POWER SUPPLY	110-120 Volts AC-60 Cycles RATING 1.96 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13, Video IF 25.75MC, Sound IF 21.25MC (Intercarrier)

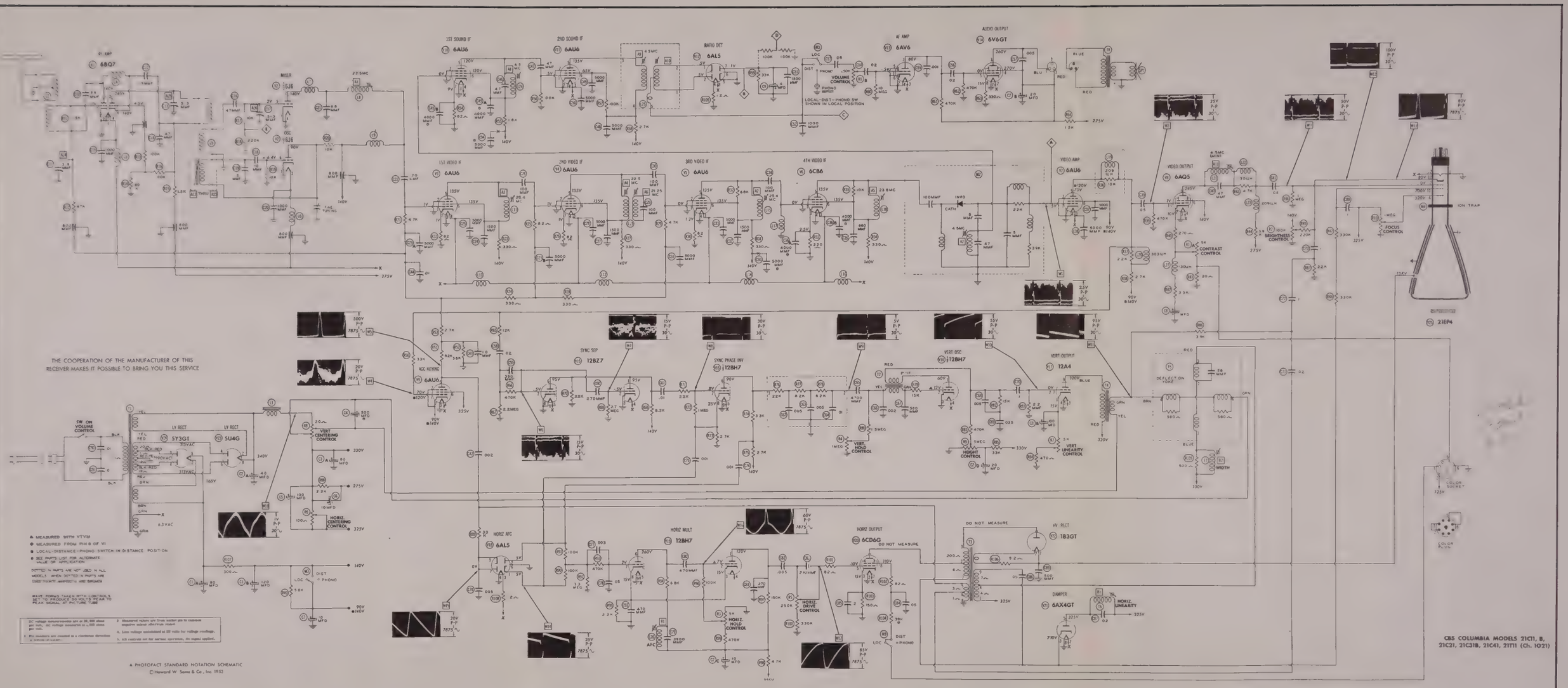
INDEX

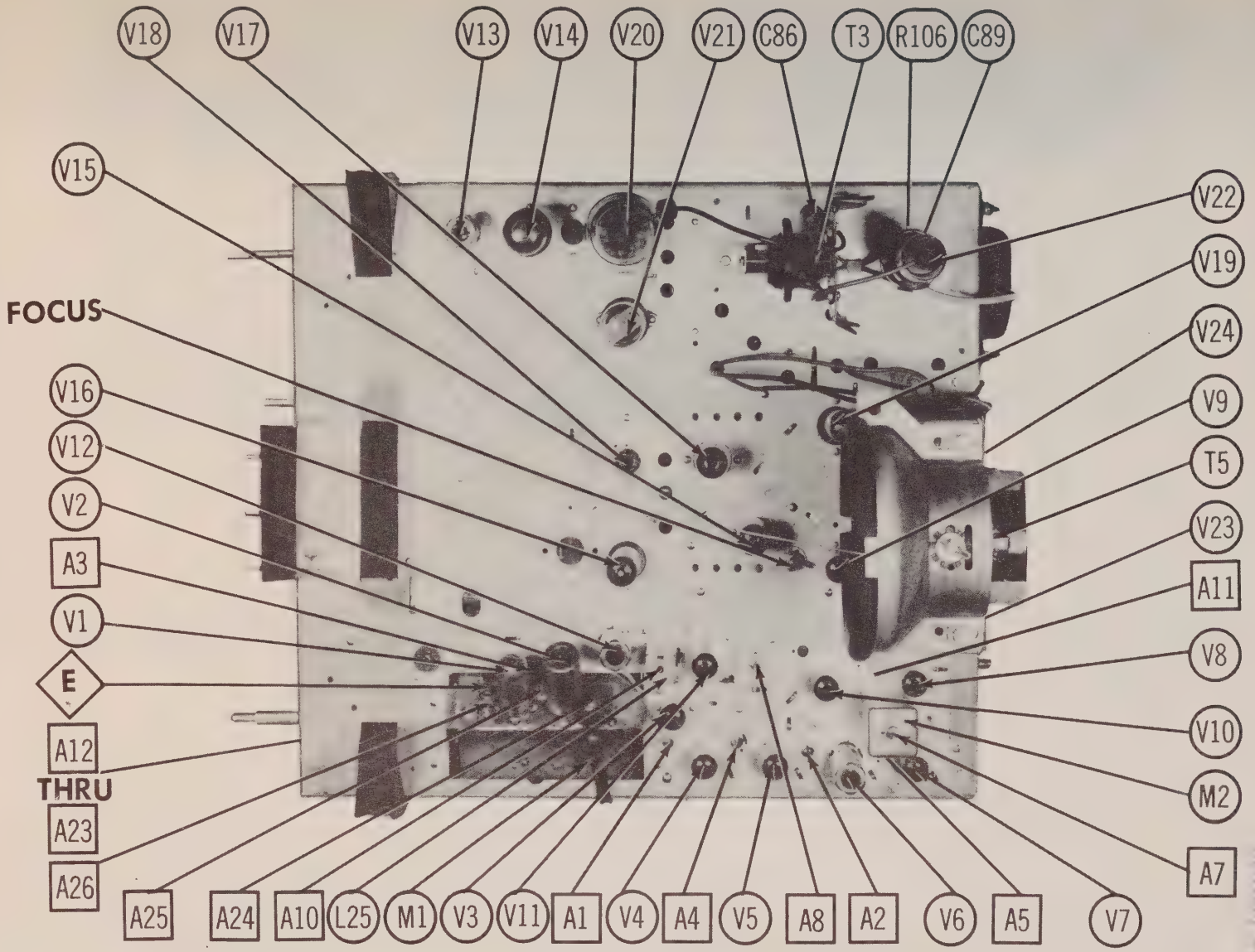
Alignment Instructions 6, 7
Disassembly Instructions 18
Horizontal Sweep Circuit Adjustments 13
Parts List and Descriptions 14, 15, 16
Photographs
Cabinet- Rear View 13
Capacitor and Alignment Identification 4, 9
Chassis - Top View 3
RF Tuner 10, 11
Photographs (Cont)
Resistor and Inductor Identification 12, 17
Resistance Measurements 8
Schematic 2
Servicing in the Field 18
Tube Failure Check Chart 5
Tube Placement Chart (Bottom View) 8
Tube Placement Chart (Top View) 5

CBS COLUMBIA MODELS 21C11, B, 21C21, 21C31B, 21C41, 21T11 (Ch. 1021)

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

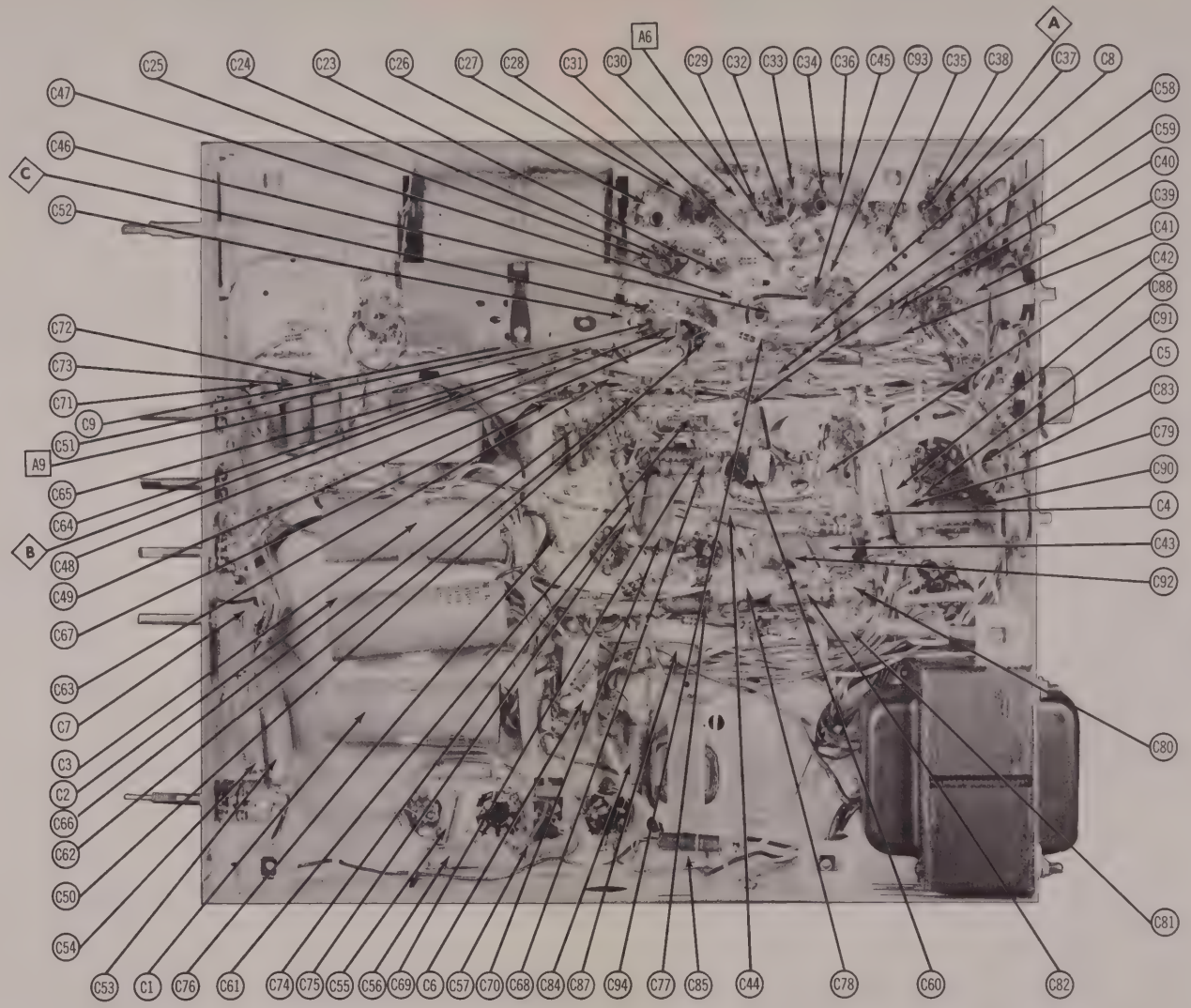

CBS COLUMBIA MODELS 21C11, B, 21C21, 21C31B, 21C41, 21T11 (Ch. 1021)
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1953
CBS COLUMBIA MODELS 21C11, B, 21C21, 21C31B, 21C41, 21T11 (Ch. 1021)



CHASSIS TOP VIEW

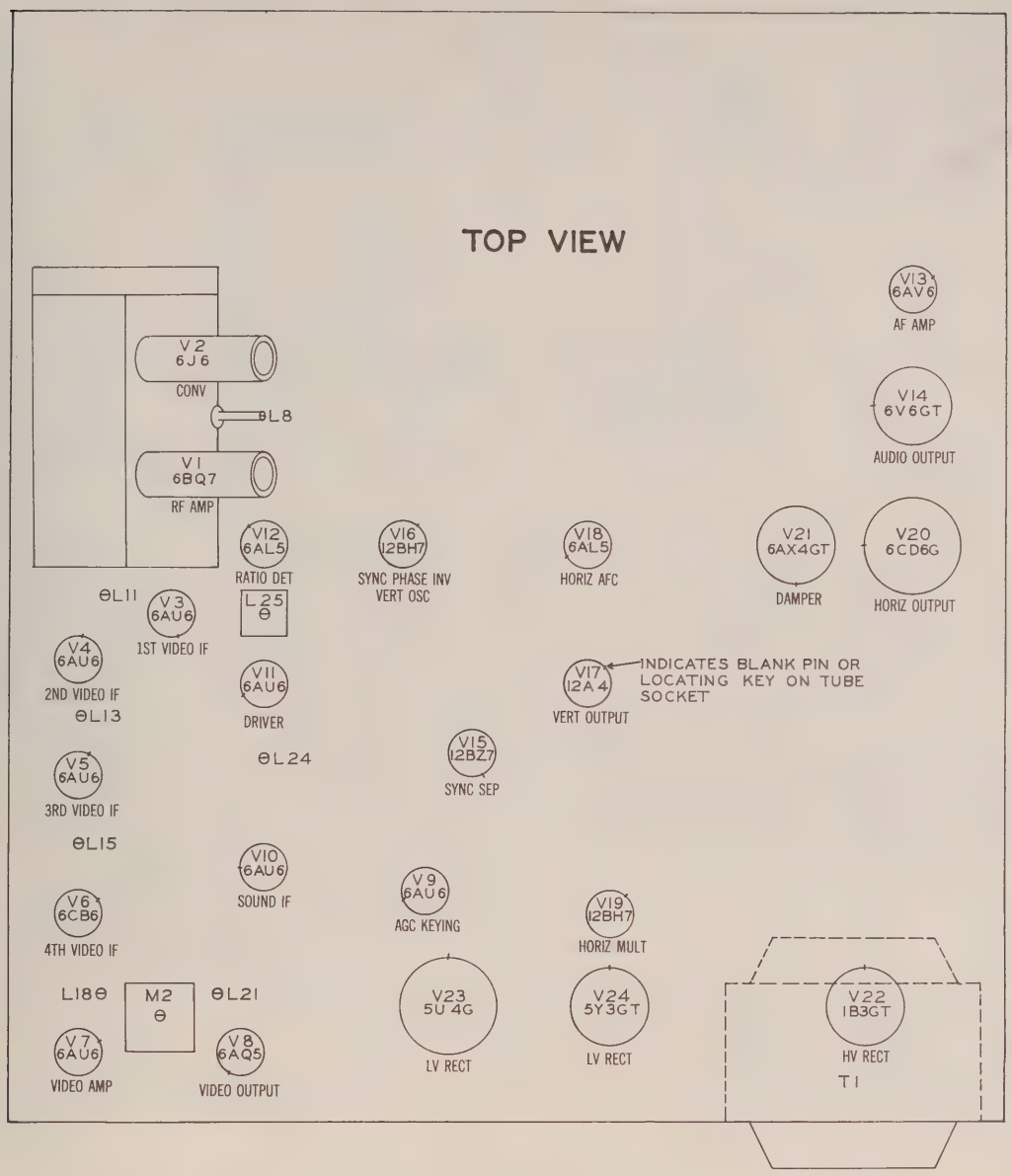
CBS COLUMBIA MODELS 21C11, B, 21C21, 21C31B, 21C41, 21111 (Ch. 1021)

DENVER, COLORADO



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placment chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound - V23

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - V2, V3, V4, V5, V6, V24
No pic, no sound, has snow - V1, V2, V3
No pic, has sound, has raster - V7, V8, V25
Has pic, no sound - V10, V11, V12, V13, V14
Overloaded picture - V9

SYNC FAILURE
No vert. sync - V16
No horiz. sync - V16, V18, V19
No vert. or horiz. sync - V15, V16

SWEEP FAILURE
No raster, has sound - V19, V20, V21, V22, V25
No vert. deflection - V16, V17
Poor vert. linearity or foldover - V16, V17
Poor horiz. linearity or foldover - V19, V20, V21
Narrow picture - V19, V20, V21, V22, V23, V24
Vert. off freq. - V16
Horiz. off freq. - V16, V18, V19

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard can be eliminated by removing the color plug from its socket on rear of chassis.

VIDEO IF ALIGNMENT

Remove the converter tube (V2) from its socket and replace with a 6J6 which has pin 1 removed.
This will disable the local oscillator and reduce the possibility of erroneous indications.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	25.4MC (Unmod.)	Any	DC probe to point (A). Common to chassis.	A1, A2	Adjust for maximum deflection. Attenuate generator output to maintain approximately 3 volts at VTVM.
2.	"	"	22.5MC	"	"	A3, A4	"
3.	"	"	23.6MC	"	"	A5	"
4.	"	"	21.25MC	"	"	A6	Adjust for MINIMUM deflection.

OVERALL VIDEO IF RESPONSE CHECK

Connect the negative lead of a 3 volt battery to the ungrounded side of C45. Connect the positive lead to chassis.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
5.	Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	24MC (10MC Swp)	21.25MC 25.75MC	Any	Vert. Amp. to point (A). Low side to chassis.		Check for response similar to Fig. 1. If necessary retouch A1 through A5 for desired response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect two matched 100KΩ (±1%) resistors in series from point (B) to chassis. The junction of these two resistors is alignment point D as shown on the schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
6.	.01MFD	High side to point (A) Low side to chassis.	4.5MC (Unmod)	Any	DC probe to point (B) Common to chassis.	A7, A8, A9	Adjust for maximum deflection.
7.	"	"	"	"	DC probe to point (C) Common to point (D)	A10	Adjust for a zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	.01MFD	High side to point (A). Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any	Vert. Amp. to point (B). Low side to chassis.	A7, A8 A9	Disconnect stabilizer capacitor C9. Adjust for curve of maximum amplitude and symmetry as in Fig. 2.
7.	"	"	"	"	"	Vert. Amp. to point (C). Low side to chassis.	A10	Reconnect capacitor C9. Adjust so that 4.5MC occurs at center of crossover lines as in Fig. 3. SLIGHTLY retouch A9 for maximum amplitude and straightness of crossover lines.

4.5MC TRAP ALIGNMENT

Set contrast control for maximum contrast.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
8.	.01MFD	High side to point (A) Low side to chassis.	4.5MC (Unmod)	Any	Not Used	All	If All is misadjusted a 4.5MC dot pattern will be visible on the picture screen. Adjust All for MINIMUM dot pattern.

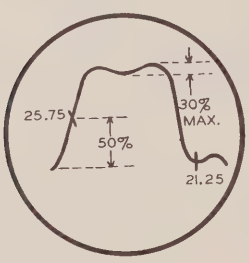


FIG. 1

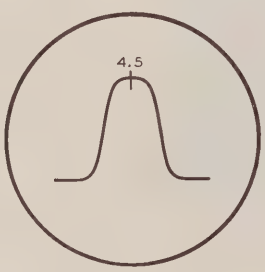


FIG. 2

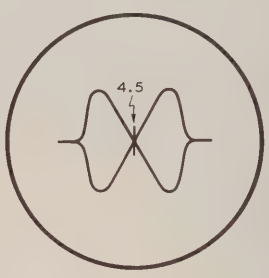


FIG. 3

ALIGNMENT INSTRUCTIONS (CONT.)

L. F. BLANKENSHIP
3926
DENVER, COLORADO

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.
The channel oscillator adjustment screws are reached through a hole at the upper right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel.
Connect bias battery as under Video IF Alignment.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. Amp. to point (A). Low side to chassis.	A12	Adjust to place sound marker in trap notch as in Fig. 4. Video marker should be at 50%.
			207MC (10MC Swp)	205.25MC 209.75MC	12		A13	
			201MC (10MC Swp)	199.25MC 203.75MC	11		A14	
			195MC (10MC Swp)	193.25MC 197.75MC	10		A15	
			189MC (10MC Swp)	187.25MC 191.75MC	9		A16	
			183MC (10MC Swp)	181.25MC 185.75MC	8		A17	
			177MC (10MC Swp)	175.25MC 179.75MC	7		A18	
			85MC (10MC Swp)	83.25MC 87.75MC	6		A19	
			79MC (10MC Swp)	77.25MC 81.75MC	5		A20	
			69MC (10MC Swp)	67.25MC 71.75MC	4		A21	
			63MC (10MC Swp)	61.25MC 65.75MC	3		A22	
			57MC (10MC Swp)	55.25MC 59.75MC	2		A23	

RF AND MIXER ALIGNMENT

Connect bias battery as under Video IF Alignment.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
10.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC Swp)	205.25MC 209.75MC	12	Vert. Amp. thru 10KΩ to point (E). Low side to chassis.	A24, A25 A26	Adjust for maximum response with band width similar to Fig. 5.
11.	"	"	213MC (10MC Swp)	211.25MC 215.75MC	13	"		Check for response similar to Fig. 5. If markers fall below 70% on any channel make slight compromise adjustments of A24, A25 and A26 with channel switch set to that channel, then recheck all other channels to see that they have not been seriously affected.
			201MC (10MC Swp)	199.25MC 203.75MC	11			
			195MC (10MC Swp)	193.25MC 197.75MC	10			
			189MC (10MC Swp)	187.25MC 191.75MC	9			
			183MC (10MC Swp)	181.25MC 185.75MC	8			
			177MC (10MC Swp)	175.25MC 179.75MC	7			
			85MC (10MC Swp)	83.25MC 87.75MC	6			
			79MC (10MC Swp)	77.25MC 81.75MC	5			
			69MC (10MC Swp)	67.25MC 71.75MC	4			
			63MC (10MC Swp)	61.25MC 65.75MC	3			
			57MC (10MC Swp)	55.25MC 59.75MC	2			

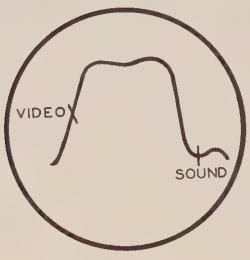


FIG. 4

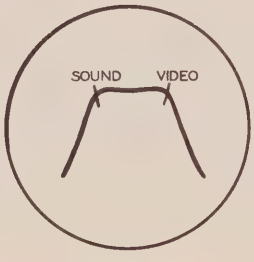
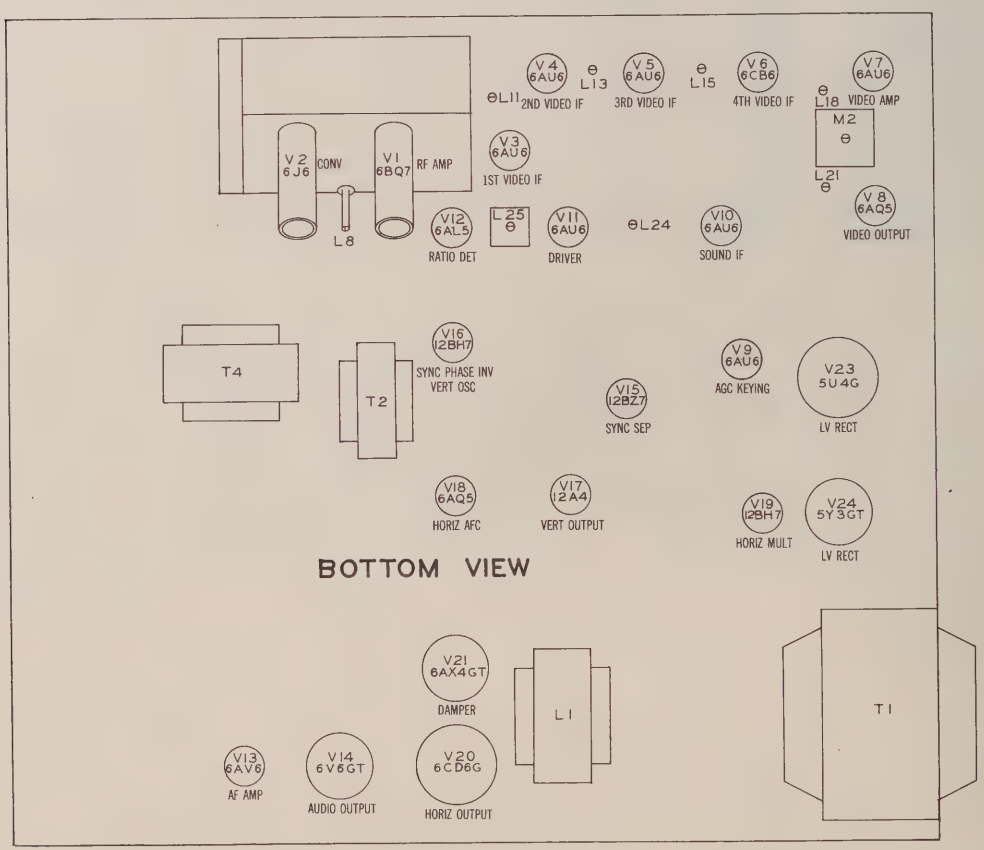


FIG. 5

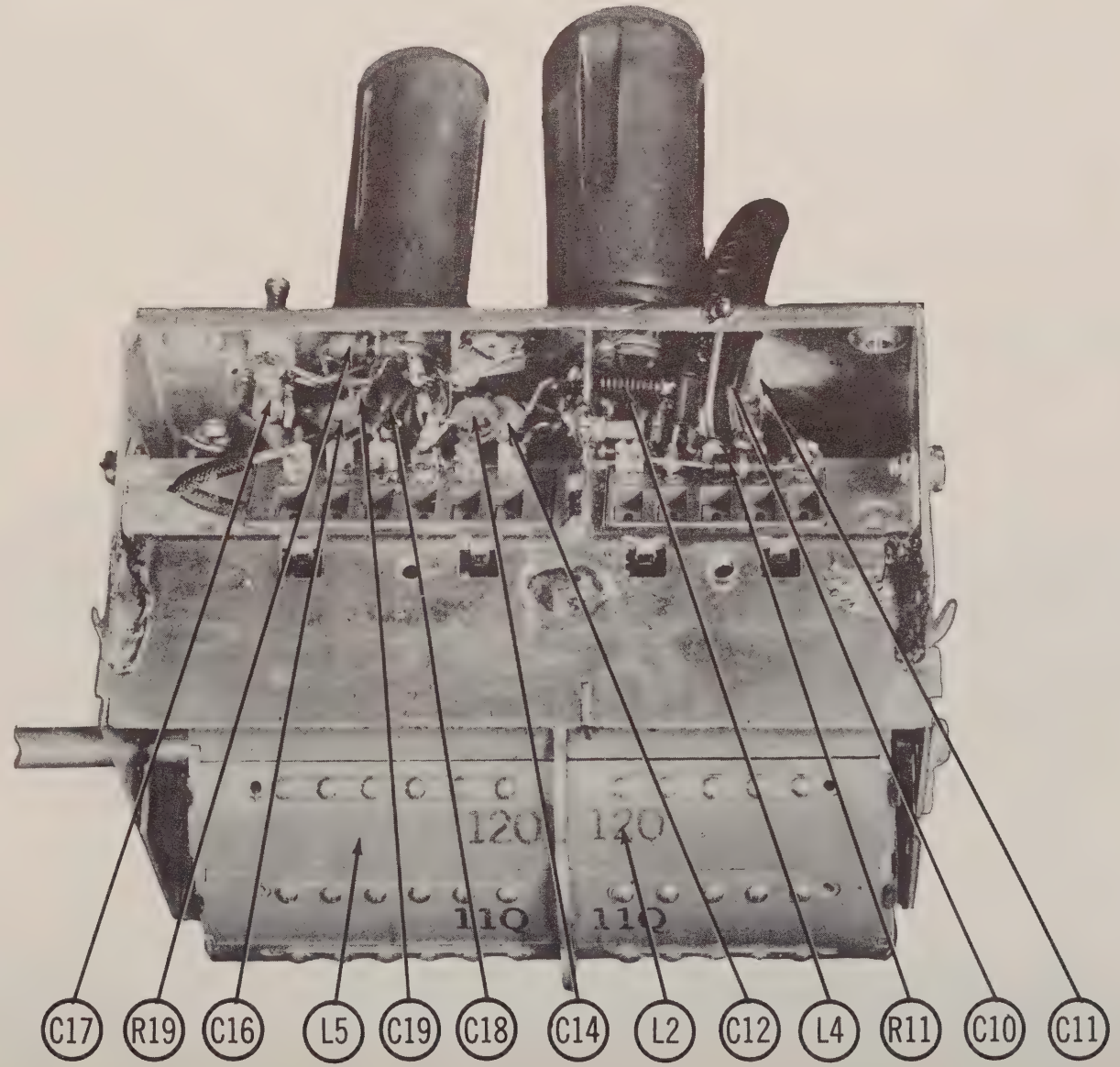
RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BQ7	INF	105KΩ	0Ω	.1Ω	0Ω	†3.8KΩ	†165KΩ	INF	0Ω
V 2	6J6	#10KΩ	#300Ω	.1Ω	0Ω	230KΩ	10KΩ	0Ω		
V 3	6AU6	65KΩ	0Ω	0Ω	.1Ω	#630Ω	#630Ω	82Ω		
V 4	6AU6	60KΩ	0Ω	.1Ω	0Ω	#630Ω	#630Ω	82Ω		
V 5	6AU6	65KΩ	0Ω	.1Ω	0Ω	#630Ω	#630Ω	82Ω		
V 6	6CB6	2.8Ω	220Ω	.1Ω	0Ω	#630Ω	#630Ω	0Ω		
V 7	6AU6	4KΩ	0Ω	.1Ω	0Ω	#8.5KΩ	#6KΩ	0Ω		
V 8	6AQ5	470KΩ	920Ω	0Ω	.1Ω	†6.2KΩ	#300Ω	470KΩ		
V 9	6AU6	#40KΩ	#6KΩ	0Ω	.1Ω	140KΩ	†75Ω	#6KΩ		
V 10	6AU6	1.6Ω	0Ω	0Ω	.1Ω	#2.1KΩ	#2.1KΩ	82Ω		
V 11	6AU6	100KΩ	0Ω	.1Ω	0Ω	#3KΩ	#103KΩ	0Ω		
V 12	6AL5	INF	INF	.8Ω	.1Ω	0Ω	0Ω	33KΩ		
V 13	6AV6	10 Meg	0Ω	.1Ω	0Ω	0Ω	0Ω	†470KΩ		
V 14	6V6GT	†75Ω	.1Ω	†4.8KΩ	†4.5KΩ	470KΩ	INF	0Ω	330Ω	
V 15	12BZ7	#8.5KΩ	2.7Meg	0Ω	.1Ω	.1Ω	#8.5KΩ	2.7Meg	0Ω	0Ω
V 16	12BH7	†1.4KΩ	2.2Meg	0Ω	.1Ω	.1Ω	#6.3KΩ	1 Meg	2.7KΩ	0Ω
V 17	12A4	4.4KΩ	2.2Meg	.1Ω	0Ω	0Ω	INF	2.2Meg	INF	†1KΩ
V 18	6AL5	3.4Meg	3.4Meg	.8Ω	0Ω	33KΩ	0Ω	33KΩ		
V 19	12BH7	†155KΩ	100KΩ	2.2KΩ	.1Ω	.1Ω	†11.5KΩ	3.8Meg	2.2KΩ	0Ω
V 20	6CD6G	#†39KΩ	0Ω	150Ω	500KΩ	500KΩ	INF .	.1Ω	†39KΩ	Top Cap ■6Ω
V 21	6AX4GT	INF	INF	INF	INF	†75Ω	INF	.1Ω	0Ω	
V 22	1B3GT	PINS 1 - 8 HAVE INF RESISTANCE								Top Cap ■206Ω
V 23	5U4G	INF	80KΩ	INF	20Ω	INF	19Ω	INF	80KΩ	
V 24	5Y3GT	†75Ω	30KΩ	†75Ω	11Ω	INF	12Ω	†75Ω	30KΩ	
V 25	21FP4	0Ω	1 Meg	Pin 6 †40KΩ	Pin 10 ■660KΩ	Pin 11 #230KΩ	Pin 12 .1Ω			

LOCAL-DISTANCE-PHONO SIWTCH IN LOCAL POSITION.
† MEASURED FROM PIN 8 OF V23.
# MEASURED FROM PIN 8 OF V24.
■ MEASURED FROM PIN 3 OF V21.



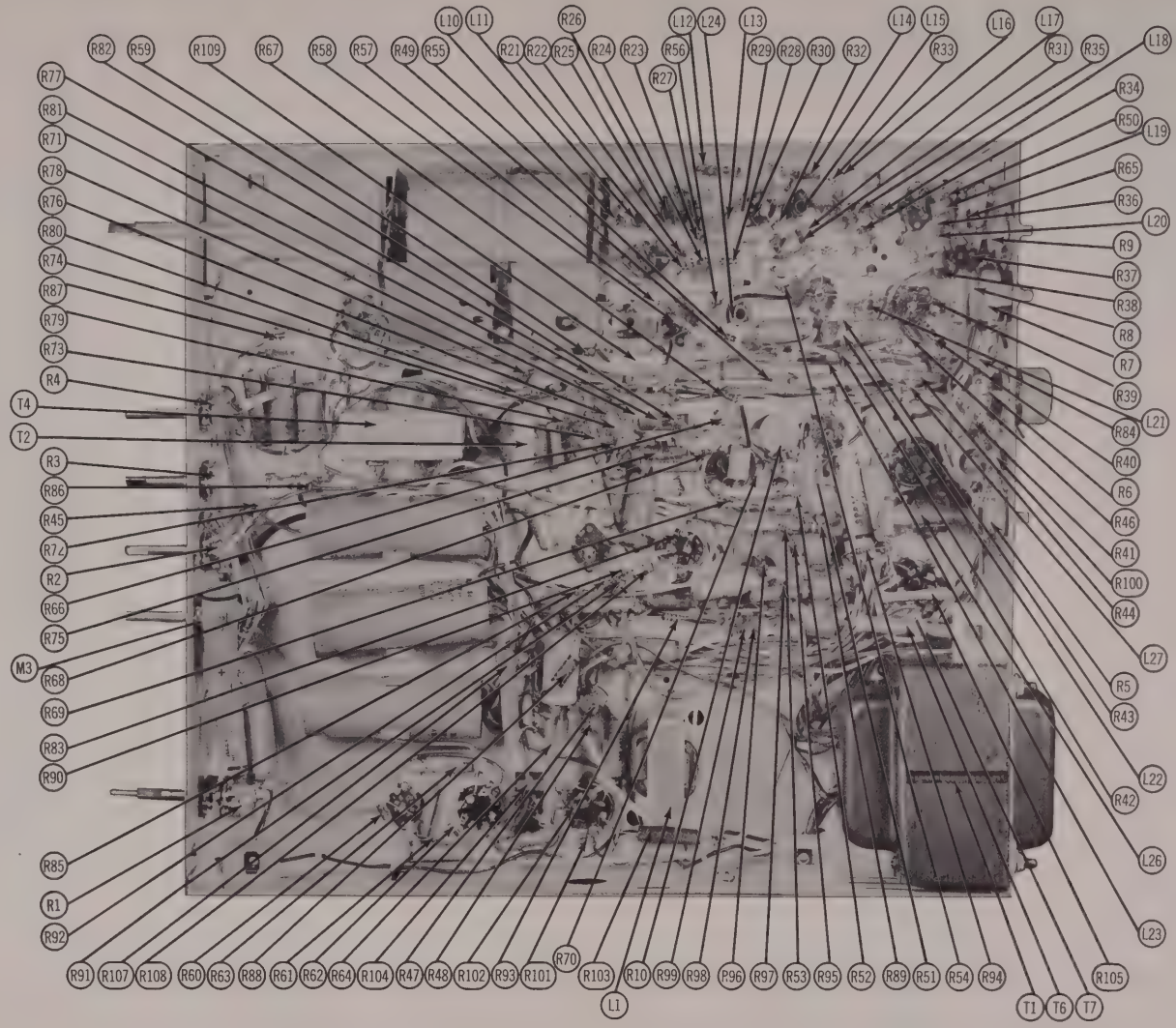
TUBE PLACEMENT CHART



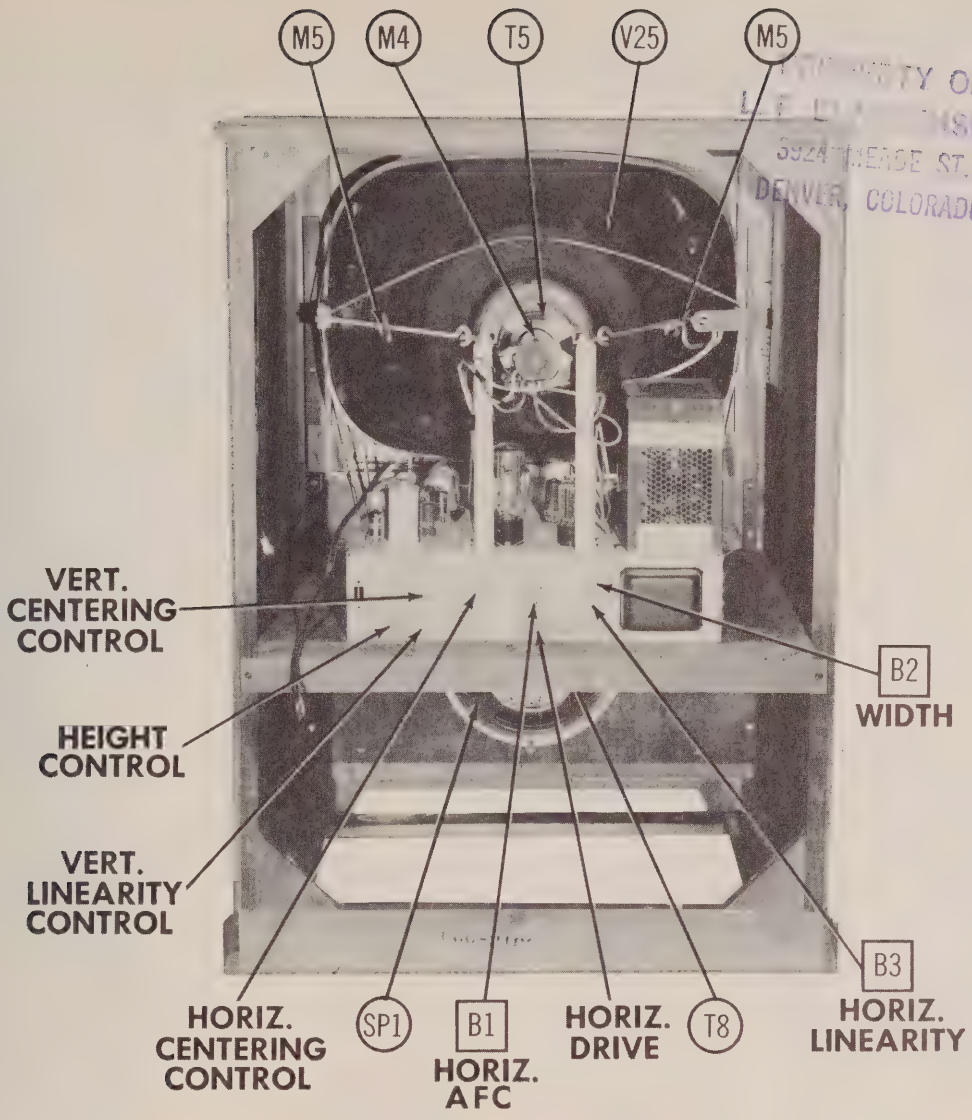
RF TUNER-RIGHT SIDE

PROPERTY OF
L. F. BLANKENSHIP
3971 MEADE ST.
DENVER, COLORADO

RF TUNER–BOTTOM VIEW



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION



CABINET-REAR VIEW

UNIVERSITY OF
L.E. LIBRARY/MSHIP
3824 TEJON ST.
DENVER, COLORADO

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

If horizontal hold control fails to maintain sync, set it at the middle of its range and adjust the horizontal AFC slug (B1) until the picture is in sync. Check other channels and, if necessary, readjust B1 slightly for best sync on all channels.

Adjust the horizontal drive control counter clockwise as far as possible without the presence of a vertical white line or compression of the center of the picture.

Adjust the width slug (B2) for a picture slightly wider than necessary to fill the picture mask horizontally.

Adjust the horizontal linearity slug (B3) for a picture that is symmetrical from left to right.

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: CBS-Columbia PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	NOTES
V1	RF Amplifier	6BQ7	6BQ7	9AJ	
V2	Converter	6J6	6J6	7BF	
V3	1st. Video IF Amp.	6AU6	6AU6	7BK	
V4	2nd. Video IF Amp.	6AU6	6AU6	7BK	
V5	3rd. Video IF Amp.	6AU6	6AU6	7BK	
V6	4th. Video IF Amp.	6CB6	6CB6	7CM	
V7	Video Amplifier	6AU6	6AU6	7BK	
V8	Video Output	6AQ5	6AQ5	7BZ	
V9	AGC Keying	6AU6	6AU6	7BK	
V10	1st. Sound IF Amp.	6AU6	6AU6	7BK	
V11	2nd. Sound IF Amp.	6AU6	6AU6	7BK	
V12	Ratio Detector	6AL5	6AL5	6BT	
V13	AF Amplifier	6AV6	6AV6	6BT	
V14	Audio Output	6V6GT	6V6GT	7B	
V15	Sync Separator	12B27	12B27	9A	
V16	Sync Phase Inv.-Vert. Oscillator	12BH7	12BH7	9A	
V17	Vert. Output	12A4	12A4	9AG	
V18	Horiz. AFC	6AL5	6AL5	6BT	
V19	Horiz. Mult.	12BH7	12BH7	9A	
V20	Horiz. Output	6CD6G	6CD6G	5BT	
V21	Damper	6AX4GT	6AX4GT	4CG	
V22	HV Rectifier	1B3GT	1B3GT	3C	
V23	LV Rectifier	5U4G	5U4G	5T	
V24	LV Rectifier	5Y3GT	5Y3GT	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: CBS-Columbia PART No.	REPLACEMENT DATA: SYLVANIA	RTMA BASE TYPE	NOTES
V25	21FP4A	21FP4A 21FP4 ①	13C 12C	① Circuit changes necessary

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CBS-Columbia PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: MALLORY PART No.	REPLACEMENT DATA: SPRAGUE PART No.	NOTES
C1A	80	200	PB20170	AFH3-26		CQ1T			TVL-3942	Brown Orange Yellow Red Green Blue Red Yellow Note 1
B	120	200								
C2A	40	450	PB20168	AFH4-18		DQ1T		SN541	TVL-4840	
B	20	450		FH3450/10		BR1045A		TC75	TVA-1705	
C	10	450								
D	20	450								
C3A	80	450	PB20169	PH8450/80		C109		FP375	TVL-3764	
B	80	50		PH8450/100						
C4	500	6	PA20171	E28C304		BRH805A				
C5	100	12	PA20141	PR812/100		BRH12A		TC2501	TVA-1130	
C6	100	250	PA20145	PR8250/12		BR1225A		TC52	TVA-1504	
C7	10	250	PA20145	PR8250/12		BR1225A		TC52	TVA-1504	
C8	1	50	PA20138	PH8150/4		BBR-1-50T		TC31	TVA-1300	
C9	1	50	PA20149	PH8150/4		BR550		TC30	TVA-1303	
C10	3.6						NP0K-3R6			
C11	3-9				839-10					
C12	1.5			SU..5NP0	TC2-1.5		NP0K-1R5	ZT-5515		5TCCB-V15
C13	.5-3				839-3			CT565A		
C14	47			BPD-000047	D6-470	TM5Q5	GPIK-470	UC-5447	5CA-Q47	
C15	1000	250	PA20145	BPD-001	DD-103	TM5D1	501-001	DC-521	5HK-D1	
C16	47			BPD-000047	D6-470	TM5Q5	GPIK-470	UC-5447	5CA-Q47	
C17	.5-3				839-3			CT565A		
C18	10			SIOJN750	TCN-10		N750K-100	NT-541	5TCU-Q1	
C19	5			SISNP0	TC2-5		NP0K-050	ZT-556	5TCCB-V5	
C20	1000			BPD-001	DD-103	TM5D1	501-001	DC-521	5HK-D1	
C21	6.8			SI6.8NP0	TC2-6.8		NP0K-6R8	ZT-5568	5TCCB-V68	
C22	120			SI20	D6-121	TM5T12	GP2K-121	UC-5312	5CA-T12	
C23A	5000		PA19183	BPD-2-0047	DD-2-502	TM5DD5	801-005	DC-525	5HK-ED47	
B	5000						801-005	DC-529		
C24	1500		PA19148	BPD-0015	DD-152	TM5D15	801-0015	DC-5215	5HK-D15	
C25	5000		PA19109	BPD-005	DD-502	TM5D5	801-005	DC-525	5HK-D5	
C26	100		PE556-118-2	SI100	D6-101	TM5T1	GPIK-101	UC-531	5CA-T1	
C27	1500		PA19148	BPD-0015	DD-152	TM5D15	801-0015	DC-5215	5HK-D15	
C28	5000		PA19109	BPD-005	DD-502	TM5D5	801-005	DC-525	5HK-D5	
C29	100	500		1469-0001		SR5T1		MCB225	MS-35	
C30	100		PE556-118-2	SI100	D6-101	TM5T1	GPIK-101	UC-531	5CA-T1	
C31	5000		PA19109	BPD-005	DD-502	TM5D5	801-005	DC-525	5HK-D5	
C32	1500		PA19148	BPD-0015	DD-152	TM5D15	801-0015	DC-5215	5HK-D15	
C33	5000		PA19109	BPD-005	DD-502	TM5D5	801-005	DC-525	5HK-D5	
C34	100		PE556-118-2	SI100	D6-101	TM5T1	GPIK-101	UC-531	5CA-T1	
C35	680	500	PE190-143	SI680	D6-681		GP3K-681		1FM-37	
C36A	4000			BPD-2X004	D6-402 D6-402	TM5DD4	822-004	DCD-524	5HK-ED4	Note 2
B	4000									
C37	5000		PA19109	BPD-005	DD-502	TM5D5	801-005	DC-525	5HK-D5	
C38	5000		PA19109	BPD-005	DD-502	TM5D5	801-005	DC-525	5HK-D5	
C39	.05	600	PE194-160	P688-05	DF-503	PTE8S5		PT615	6TM-S5	
C40	47	500		1469-00005		SR5Q5		MCB225	MS-35	
C41	.05	600	PE194-160	P688-05	DF-503	PTE8S5		PT615	6TM-S5	
C42	.002	600	PE194-146	P688-002	D6-202	PTE8D2	GP2-333-202	PT622	6TM-D2	
C43	1	100	PE194-21	484-1				PT41	2TM-M1	
C44	.01	600	PE194-155	P688-01	D6-103	PTE881	GP2-333-103	PT611	6TM-S1	
C45A	4000			BPD-2X004	D6-402 D6-402	TM5DD4	822-004	DCD-524	5HK-ED4	Note 3 Note 3
B	4000									
C46	47	500		1469-00005		SR5Q5		MCB225	MS-35	
C47	47		PE555-113-2	SI47	D6-470	TM5Q5	GPIK-470	UC-5347	5CA-Q47	
C48	5000		PA19109	BPD-005	DD-502	TM5D5	801-005	DC-525	5HK-D5	
C49	5000		PA19109	BPD-005	DD-502	TM5D5	801-005	DC-525	5HK-D5	
C50	5000		PA19109	BPD-005	DD-502	TM5D5	801-005	DC-525	5HK-D5	
C51	1500		PA19148	BPD-0015	DD-152	TM5D15	801-0015	DC-5215	5HK-D15	
C52	1000		PE555-136-2	SI1000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C53	.05	600	PE194-160	P688-05	DF-503	PTE8S5		PT615	6TM-S5	
C54	.02	600	PE194-156	P688-02	DF-203	PTE8S2		PT612	6TM-S2	

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CBS-Columbia PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: MALLORY PART No.	REPLACEMENT DATA: SPRAGUE PART No.	NOTES
C55	.001	1000	PE194-145	P1088-001		DF-102		PT16D1	MB-D1	
C56	.02	600	PE194-156	P688-02	DF-203	PTE8S2		PT612	6TM-S2	
C57	.005	600	PE194-151	P688-005	D6-502	PTE8S5	GP3-333-502	PT615	6TM-S5	
C58	.02	600	PE194-156	P688-02	DF-203	PTE8S2		PT612	6TM-S2	
C59	390	500	PE190-137	1468-0004	D6-391	5W5T4	GP3K-391	MC243	1FM-34	
C60	270	500	PE190-133	1468-0003	D6-271	5W5T3	GP3K-271	MC241	1FM-33	
C61	.01	600	PE194-155	P688-01	D6-103	PTE881	GP2-333-103	PT611	6TM-S1	
C62	.005	600	PE194-151	P688-005	D6-502	PTE8D5	GP2-333-502	PT625	6TM-D5	
C63	.005	600	PE194-151	P688-005	D6-502	PTE8D5	GP2-333-502	PT625	6TM-D5	
C64	.01	600	PE194-155	P688-01	D6-103	PTE881	GP2-333-103	PT611	6TM-S1	
C65	4700	500	PE192-163	1464-005		1DR5D5		MCB465	MS-25	
C66	.002	600	PE194-146	P688-002	D6-202	PTE8D2	GP2-333-202	PT622	6TM-D2	
C67	500	500	PE190-141							
C68	.005	600	PE194-151	P688-005	D6-502	PTE8D5	GP2-333-502	PT625	6TM-D5	
C69	.035	500	PE194-159							
C70	.1	600	PE194-162	P688-1	DF-104	PTE8P1		PT601	6TM-P1	
C71	.02	600	PE194-156	P688-02	DF-203	PTE8S2		PT612	6TM-S2	
C72	.1	600	PE194-162	P688-1	DF-104	PTE8P1		PT601	6TM-P1	
C73	.1	600	PE194-162	P688-1	DF-104	PTE8P1		PT601	6TM-P1	
C74	.001	600	PE194-145	P688-001	D6-102	PTE8D1	GP2L-102	PT621	6TM-D1	
C75	.001	600	PE194-145	P688-001	D6-102	PTE8D1	GP2L-102	PT621	6TM-D1	
C76	.005	600	PE194-151	P688-005	D6-502	PTE8D5	GP2-333-502	PT625	6TM-D5	
C77	.003	600	PE194-148	P688-003	D6-302	PTE8D3	GP2-333-502	PT623	6TM-D3	
C78	.05	600	PE194-160	P688-05	DF-503	PTE8S5		PT615	6TM-S5	
C79	2900	500	PE195-261	1464-004		1DR5D4		MCB463	MS-34	
C80	470	500	PE190-139	1469-0005		SR5T5		MCB345	MS-35	
C81	270	500	PE190-133	1469-0003		5R5T3		MCB241	MS-33	
C82	.005	600	PE194-151	P688-005	D6-502	PTE8D5	GP2-333-502	PT625	6TM-D5	
C83	270	500	PE190-133	1469-0003		5R5T3		MCB241	MS-33	
C84	.05	600	PE194-160	P688-05	DF-503	PTE8S5		PT615	6TM-S5	
C85	.2	200	PE19158	P688-22				TP429	2TM-P22	
C86	.05	600	PE194-160	P688-05		PTE8S5		PT615	6TM-S5	
C87	.02	600	PE194-156	P688-02	DF-203	PTE8S2		PT612	6TM-S2	
C88	.1	600	PE194-162	P688-1	DF-104	PTE8P1		PT601	6TM-P1	
C89	500	20000	PB18175-1	HV20C	TV3-502	MMC-2307T	413-501		20DK-T3	
C90	.01	600	PP19106	682GZKY-01		P68I		PT611	6TM-S1	
C91	.01	600	PP19106	682GZKY-01		P68I		PT611	6TM-S1	
C92	470	500	PE190-139	1469-0005		SR5T5		MCB345	MS-35	
C93	5000		PA19109	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	Note 4
C94	5000		PA19109	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	Note 4

Note 1. Non-polarized unit.
Note 2. Some Models use dual 5000MMF in this application (part #PA19163)
Note 3. Some Models use 5000MMF in this application (Part #PA19109)
Note 4. Not used in all Models.

CONTROLS

ITEM No	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CBS-Columbia PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: MALLORY PART No.	INSTALLATION NOTES
R1A	5000Ω	½	PA34136	QJ-433*	RTV-333		UF53R †	Contrast-Panel
B	250KΩ	½					UR254A †	Volume-Rear
C	Switch						US-28	Attach to R1B
R2A	100KΩ	½	PA34134	Q1i-128	AG-49-8	B-40	U-41	Brightness
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R2A
R3A	5000Ω	½	PA34137	Q1i-114	AG-19-8	B-10	U-14	Horiz. Hold
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R3A
R4A	1 Meg	½	PA34139	Q1i-137	AG-61-8	B-69	U-54	Vert. Hold-Note
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R4A
R5A	250KΩ	½	PA34138	Q1i-130	AG-55-8	AB-50	SU-46	Horiz. Drive
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R5A
R6A	100Ω	2	PA34116	W-100	A43-100	VK-121	R100L	Horiz. Centering-Wire Wound
B	Shaft		Not Req.	Not Req.	FKS-1/4	Not Req.	Not Req.	Attach to R6A
R7A	5000Ω	2	PA34135	W00-5000	A43-5000	VK-135	R5000L	Vert. Linearity-Wire Wound
B	Shaft		Not Req.	Not Req.	FKS-1/4	Not Req.	Not Req.	Attach to R7A
R8	20Ω	2	PA34118	W20X10	RTV-98	SVT-901	R20C.T.	Vert. Centering-Tap@10Ω-Wire Wound
R9A	5 Meg	½	PA34111	Q1i-141	AG-85-8	AB-87	SU-67	Height
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R9A
R10A	1 Meg	½	PA34112	Q1i-137	AG-61-8	AB-69	SU-54	Focus
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R10A

Note . Some models use alternate control (Part No. PA34146).
† UNIVERSAL REPLACEMENT (MALLORY EXACT DUPLICATE PART NO. UE50S8).
* CONCENTRIKIT EQUIVALENT-KIT K-2, BASE ELEMENTS AND SHAFTS B17-1I4 & P1-1I8 (Panel), B13-1I30 & R1-205 (Rear) & SWITCH S6-1 .

RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: CBS-Columbia PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R11	15KΩ			BTS-15K	
R12	47KΩ			BTS-47K	
R13	100KΩ			BTS-100K	
R14	160KΩ 5%				
R15	150Ω			BTS-1500	
R16	100KΩ 5%				
R17	10KΩ			BTS-10K	
R18	220KΩ				
R19	10KΩ			BTS-10K	
R20	10KΩ			BTS-10K	
R21	4700Ω		PE231-1135	BTS-4700	
R22	82Ω		PE231-1123	BTS-82	
R23	330Ω		PE231-1137	BTS-330	
R24	330Ω		PE231-1137	BTS-330	
R25	8200Ω		PE231-1171		
R26	82Ω		PE231-1123	BTS-82	
R27	330Ω		PE231-1137	BTS-330	
R28	330Ω		PE231-1137	BTS-330	
R29	4700Ω		PE231-1165	BTS-4700	
R30	82Ω		PE231-1123	BTS-82	
R31	330Ω		PE231-1137	BTS-330	
R32	6800Ω		PE231-1169		
R33	220Ω		PE231-1133	BTS-220	
R34	330Ω		PE231-1137	BTS-330	
R35	10KΩ		PE231-1173		
R36	10KΩ		PE231-1173	BTS-10K	
R37	2200Ω		PE231-1157	BTS-2200	
R38	2700Ω		PE233-1159	BTS-2700	
R39	470KΩ		PE231-1213	BTS-470K	
R40	270Ω		PE232-1135	BTA-270	
R41	220Ω		PE231-1127	BTS-220	
R42	3300Ω		PE231-1161	BTS-3300	
R43	4700Ω		PE231-1165	BTS-4700	
R44	200Ω		PE233-1143	BTS-3900	
R45	220KΩ		PE231-1205	BTS-220K	
R46	1Meg		PE231-1221	BTS-1Meg	
R47	330KΩ	2	PE233-1209	BTS-330K	
R48	330KΩ	2	PE233-1209	BTS-330K	
R49	560Ω		PE232-1167	BTA-5600	
R50	33KΩ		PE231-1165	BTS-33K	
R51	82KΩ		PE231-1195	BTS-82K	
R52	56KΩ		PE231-1191	BTS-56K	
R53	2700Ω		PE231-1159	BTS-2700	
R54	82Ω		PE231-1123	BTS-82	
R55	1800Ω		PE231-1155	BTS-1800	
R56	100KΩ		PE231-1197	BTS-100K	

RESISTORS (CONT.)

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: CBS-Columbia PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R57	100KΩ		PE231-1197	BTS-100K	
R58	2700Ω		PE231-1159	BTS-2700	
R59	33KΩ		PE231-1165	BTS-33K	
R60	10Meg		PE231-2345	BTS-10Meg	
R61	470KΩ		PE231-1213	BTS-470K	
R62	470KΩ		PE231-1213	BTS-470K	
R63	330Ω	1	PE232-1137	BTA-330	
R64	1500Ω	10	PC21134-12	1-3/4A-1500	
R65	12KΩ		PE231-1175	BTS-12K	
R66	470KΩ		PE231-1213	BTS-470K	
R67	2.2Meg		PE231-1229	BTS-2.2Meg	
R68	8200Ω		PE231-1171	BTS-8200	
R69	2.7Meg		PE231-1231	BTS-2.7Meg	
R70	22KΩ		PE231-1181	BTS-22K	
R71	22KΩ		PE231-1181	BTS-22K	
R72	1Meg		PE231-1221	BTS-1Meg	
R73	2700Ω	1		BTA-2700	
R74	3300Ω	1	PE232-1161	BTA-3300	
R102	82Ω	1		BTA-82	
R103	150Ω	2	PE233-1119	BTW-2-150	
R104	39KΩ	3		BTS-39K	Note
R105	500Ω	5	PC21134-10	1-3/4A-500	
R106	8.2Ω	2	PP23158		
R107	300Ω	7	PC21134-11	1-3/4A-300	
R108	1.3Ω	1	PE23151		
R109	1.3Ω	1	PE23151		

Note: Some Models use a 22KΩ resistor in this application.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: CBS-Columbia PART No.	STANCOR PART No.	MERIT PART No	CHICAGO PART No	TRIAD PART No	RCA PART No
T1	117VAC @ 1.96A	626VCT tap @ 380VCT Total Cur. .250ADC	5VAC @ 3A	5VAC @ 2A SEC. 4 6.3VAC @ 1.2A	PC10148					

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: CBS-Columbia PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	RCA PART No.	NOTES
T2	170Ω	970Ω	PB-10106-2	A-8125	A-3003	TBO-5	A-97X	208T2 ③	Vert. Osc. Trans. Horiz. Output Trans.
T3	206Ω tap @ 6Ω	11Ω tap @ 4Ω SEC. 2 4Ω tap @ 1Ω SEC. 3 6Ω	PC-10147						
T4	920Ω	6Ω	PC-10115-6	A-8112 ①	A-3038	TBO-5	A-96X	204T2 ①	Vert. Output Trans.
T5A	12Ω		DY-8A		MDF-70	TY-2	Y-12		Horiz. Deflection Coils
B	52Ω		PC-28317-1						Vert. Deflection Coils
T6	2Ω		PA-28218		MWC-2 ②			206R1	Horiz. Lin. Coil
T7	2Ω		PA-26318		MWC-2 ③			206R1	Width Coil

① Drill one new mounting hole.
② Enlarge mounting hole.
③ Mount on top of chassis.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: CBS-Columbia PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T8	4.1KΩ	3.3Ω	300Ω	.84Ω		A-3877 ①	A-2930 ①	BO-9 ①	S-3X ①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS: SIZE	RATINGS: FIELD	RATINGS: V. C. IMP.	REPLACEMENT DATA: CBS-Columbia PART No.	REPLACEMENT DATA: VIKING PART No.	REPLACEMENT DATA: QUAM PART No	NOTES
SP1	10"	PM	3.3Ω	PD-58121 PC-58129 ① PC-58121 ② PC-5812 ③	10J11	10A51	① Speaker for Model 21T11 ② Speaker for Model 21C11 ③ Speaker for Models 31C11B & 21C31B

FILTER CHOKE

ITEM No.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D.C. RESISTANCE	RATINGS: INDUCTANCE (0 CURRENT 1000 ~)	REPLACEMENT DATA: CBS-Columbia PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
LI	160ADC	71Ω	1.8 Hy.	PB-1414	C-2325 ①	C-2991 ①	TR-1733 ①	C-21X

① Drill one new mounting hole.

CBS COLUMBIA MODELS 21C11, B, 21C21, 21C31B, 21C41, 21T11 (Ch. 1021)

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA			NOTES
		PRI.	SEC.	CBS-Columbia PART No.	MILLER PART No.	IRC PART No.	
L2	Ant. Coils	0ΩCT	0Ω				
L3	Fil. Choke	0Ω					
L4	Neutralizing Coil	0Ω					
L5	RF, Mixer Grid & Osc. Coils	0Ω					
L6	Fil. Choke	0Ω					
L7	RF Choke	0Ω					
L8	1st Video IF	1Ω					
L9	RF Choke	1.2Ω					
L10	Fil. Choke	.27Ω		PA28276	6175	CL-1	.82 Microhenry
L11	2nd. Video IF	.2Ω		PB3392	6188 ■		
L12	Fil. Choke	.27Ω		PA28276	6175	CL-1	.82 Microhenry
L13	3rd. Video IF	.4Ω		PB28320			Includes Trap
L14	Fil. Choke	.27Ω		PA28276	6175	CL-1	.82 Microhenry
L15	4th. Video IF	.2Ω		PB3392	6188 ■		
L16	Fil. Choke	.27Ω		PA28276	6175	CL-1	.82 Microhenry
L17	RF Choke	2.8Ω		PA28253	4626		21 Microhenries
L18	5th. Video IF	.2Ω		PB3392	6189 ■		
L19	Series Peaking Coil	10.5Ω		PC28255-11			209 Microhenries
L20	Shunt Peaking Coil	13Ω		PC28255-8			303 Microhenries
L21	4.5MC Trap	1.8Ω		PA28286	1470		
L22	Series Peaking Coil	6Ω		PC28255-1	4644		130 Microhenries
L23	Shunt Peaking Coil	10.5Ω		PC28255-11			209 Microhenries
L24	Sound IF	1.8Ω		PA28286	1470		
L25	Ratio Det.	5.2Ω	1.8ΩCT	PB1201 *	6205		Tertiary Winding - .6Ω
L26	Horiz. Osc.	45Ω		PA28263	6210		
L27	Shunt Peaking Coil	6Ω		PC28255-1	4644		130 Microhenries

* Alternate part #PB1202
■ Enlarge mounting hole.

MISCELLANEOUS

ITEM No.	PART NAME	CBS-Columbia PART No.	NOTES
M1	RF Tuner	PC-541215	
M2	Video Detector Assy	PB28321	Includes 100MMF, (2) 5MMF, 47MMF capacitors; 3.9KΩ, 22KΩ resistors; 1 series, 1 parallel peaking coils, 4.5MC sound IF Coil and crystal 1N60.
M3	Switch	PA37111	Function Selector
M4	Ion Trap		
M5	Correction Magnet		(2 Used)
	Cabinet	PE60155	Model 21C41
	Cabinet	PE60153-1	Model 21C11
	Cabinet	PE60153-2	Model 21C11B, 21C31B
	Cabinet	PE60154-1	Model 21C21
	Cabinet	PE60152-1	Model 21T11
	Safety Glass	PE62409	Model 21C11
	Safety Glass	PB62409	Models 21C11B, 21C21, 21C31B, 21C41, 21T11
	Retainer Strip	PC62410-1	Safety Glass (Upper) Models 21C11, 21C21, 21C41, 21T11
	Retainer Strip	PC62410-2	Safety Glass (Upper) Models 21C11B, 21C31B
	Retainer Strip	PC62412-1	Safety Glass (Lower) Models 21C11, 21C21, 21C41, 21T11
	Retainer Strip	PC62412-2	Safety Glass (Lower) Models 21C11B, 21C31B
	Mask	PC62418	
	Back	PC62417	Models 21C11, 21C11B, 21T11
	Back	PC62420	Models 21C21, 21C31B, 21C41
	Knob	PB39247-1	Function Selector, Models 21C11, 21T11
	Knob	PB39247-2	Function Selector, Models 21C11B, 21C31B
	Knob	PA39247-1	Function Selector, Models 21C21, 21C41
	Knob	PC39242-1	Channel Selector, Models 21C11, 21C21, 21T11
	Knob	PC29242-2	Channel Selector, Models 21C11B, 21C31B, 21C41
	Knob	PC39240-3	Fine Tuning,
	Knob	PC39241-1	Off/On Volume, Models 21C11, 21C11B, 21C21, 21C41, 21T11
	Knob	PC39241-2	Off/On Volume, Model 21C31B
	Knob	PC39239-3	Contrast,
	Knob	PB39246-1	Brightness, Models 21C11, 21C21, 21C41, 21T11
	Knob	PB39246-2	Brightness, Models 21C11B, 21C31B

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

For touch-up adjustment of RF Tuner oscillator adjustments, it is necessary to remove the chassis from the cabinet. (See Disassembly Instructions).

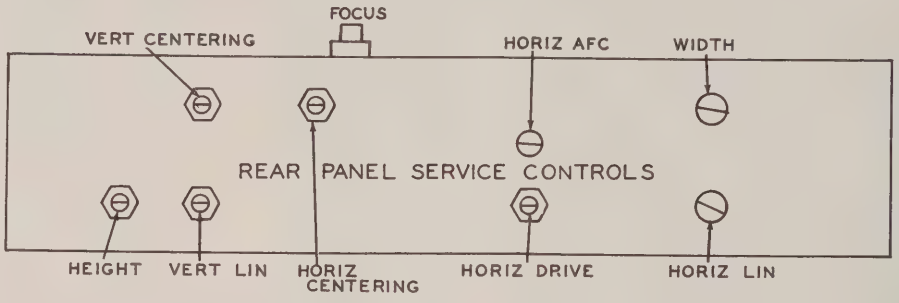
PICTURE TUBE SAFETY GLASS CLEANING

To clean safety glass remove 5 wood screws holding plastic strip at top of cabinet. Remove plastic strip and safety glass. Use extreme caution when removing safety glass.

PICTURE TUBE REMOVAL

For picture tube removal it is necessary to remove chassis. (See disassembly instructions).

SERVICE ADJUSTMENT LOCATION



HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Adjustment of the Horiz. Oscillator Circuit can be made from the rear panel of the chassis. Set the horizontal hold control at the mid-position of its range and adjust the Horiz. AFC slug until the picture synchronizes horizontally.

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate Sound IF Detector Buzz, adjust the Ratio Detector Secondary (L25) located on top of chassis. (see tube placement chart).

CENTERING

Centering is accomplished electrically. Adjust the vert. and horiz. centering controls until picture is properly centered.

DISASSEMBLY INSTRUCTIONS

① Remove 8 push on type control knobs from front panel.

② Disconnect built-in antenna and transmission line.

③ Remove 11 wood and 1 metal screws. Remove rear cover.

④ Disconnect speaker. Remove 4 speaker nuts. Remove speaker.

⑤ Remove chassis 5 chassis bolts. Remove chassis.

PROPERTY OF
L. F. BLANKENSHIP
39[illegible] ST.
DENVER, COLORADO

PHOTOFACT* Folder

CORONADO MODELS 25TV2-43-9045A, B, 25TV2-43-9060A

IMPORTANT FILING NOTICE

The contents for this envelope will be found among the last folders in this complete set of folders . . . *unless* it has been purchased as part of a *complete* volume of PHOTOFACTS assembled in a DeLuxe Binder.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.

PROPERTY OF
L. F. [illegible]
[illegible]
DENVER, COLORADO

MODEL 25TV2-43-9060A

CORONADO MODELS 25TV2-43-9045A, B, 25TV2-43-9060A

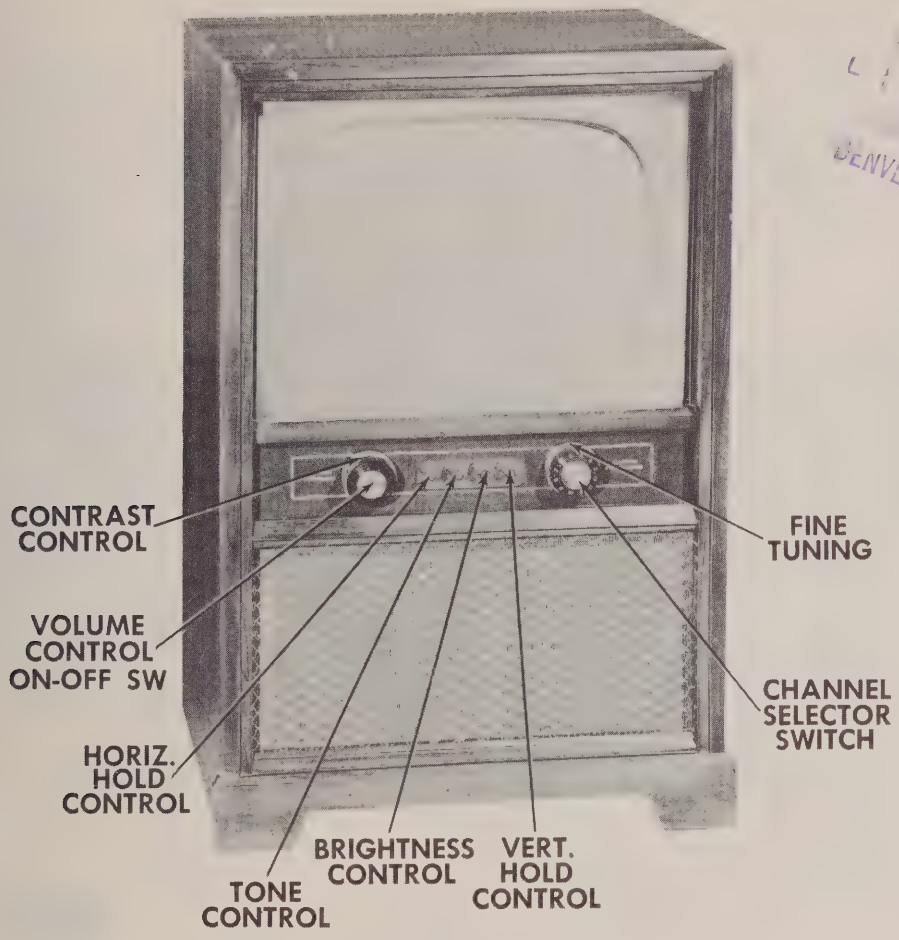
HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

DATE 4–53 SET 199 FOLDER 5

CORONADO MODELS 25TV2-43-9045A, B, 25TV2-43-9060A

LIBRARY OF
DENVER, COLORADO



Coronado Model 25TV2-43-9060A

TRADE NAME	Coronado Models 25TV2-43-9045A, B, 25TV2-43-9060A
SUPPLIER	Gamble- Skogmo Inc., 15 N. 8th. St., Minneapolis, Minn.
TYPE SET	Television Receiver
TUBES	Twenty-Three

POWER SUPPLY 110-120 Volts AC-60 Cycle RATING 1.82 Amp.@ 117 Volts AC
TUNING RANGE- Channels 2 thru 13, Video IF 26.2MC, Sound IF 21.7MC (Intercarrier)

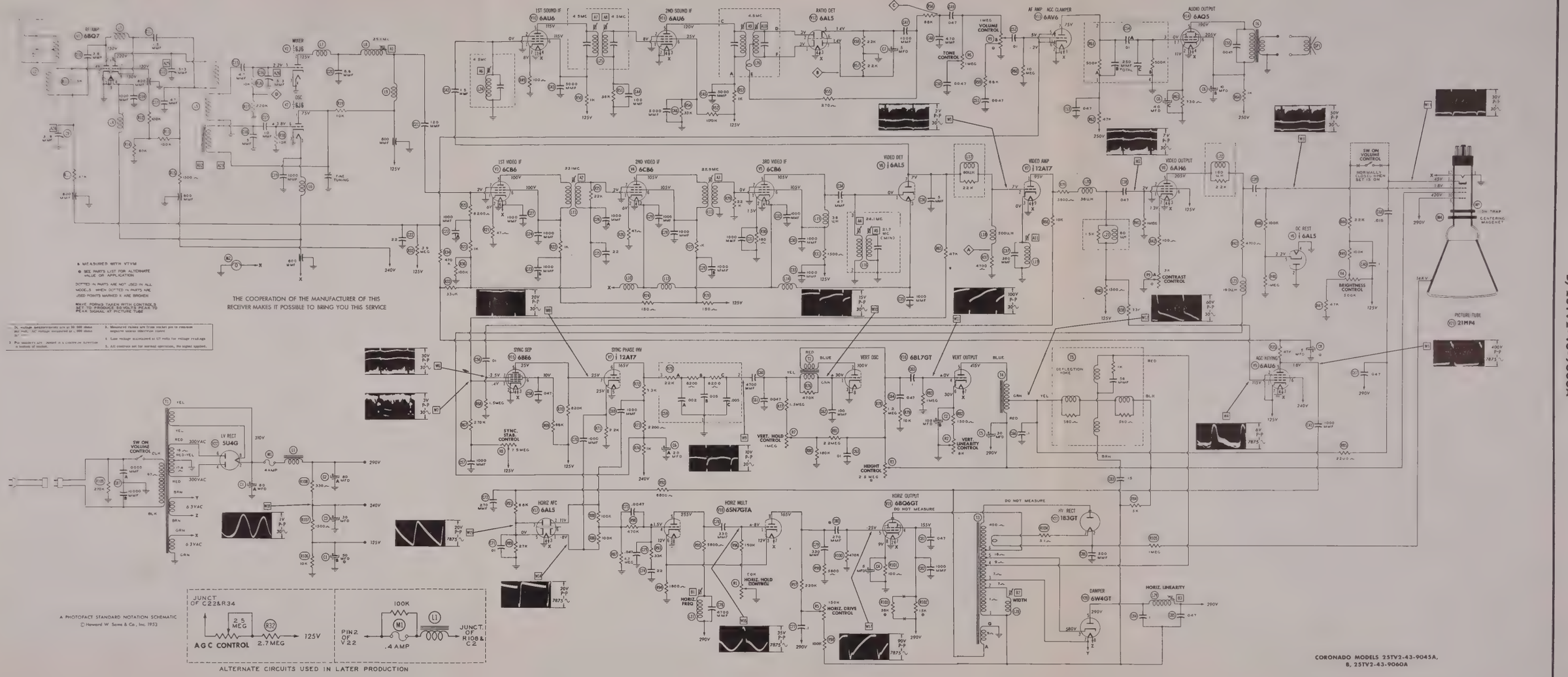
INDEX

Alignment Instructions 6, 7
Disassembly Instructions 11
Horizontal Sweep Circuit Adjustments 11
Parts List and Descriptions 12, 13, 14
Photographs
Cabinet - Rear View 11
Capacitor and Alignment Identification 4, 9
Chassis - Top View 3
Photographs (Con't)
RF Tuner 10
Resistor and Inductor Identification 15, 16
Resistance Measurements 8
Schematic 2
Tube Failure Check Chart 5
Tube Placement Chart (Bottom View) 8
Tube Placement Chart (Top View) 5

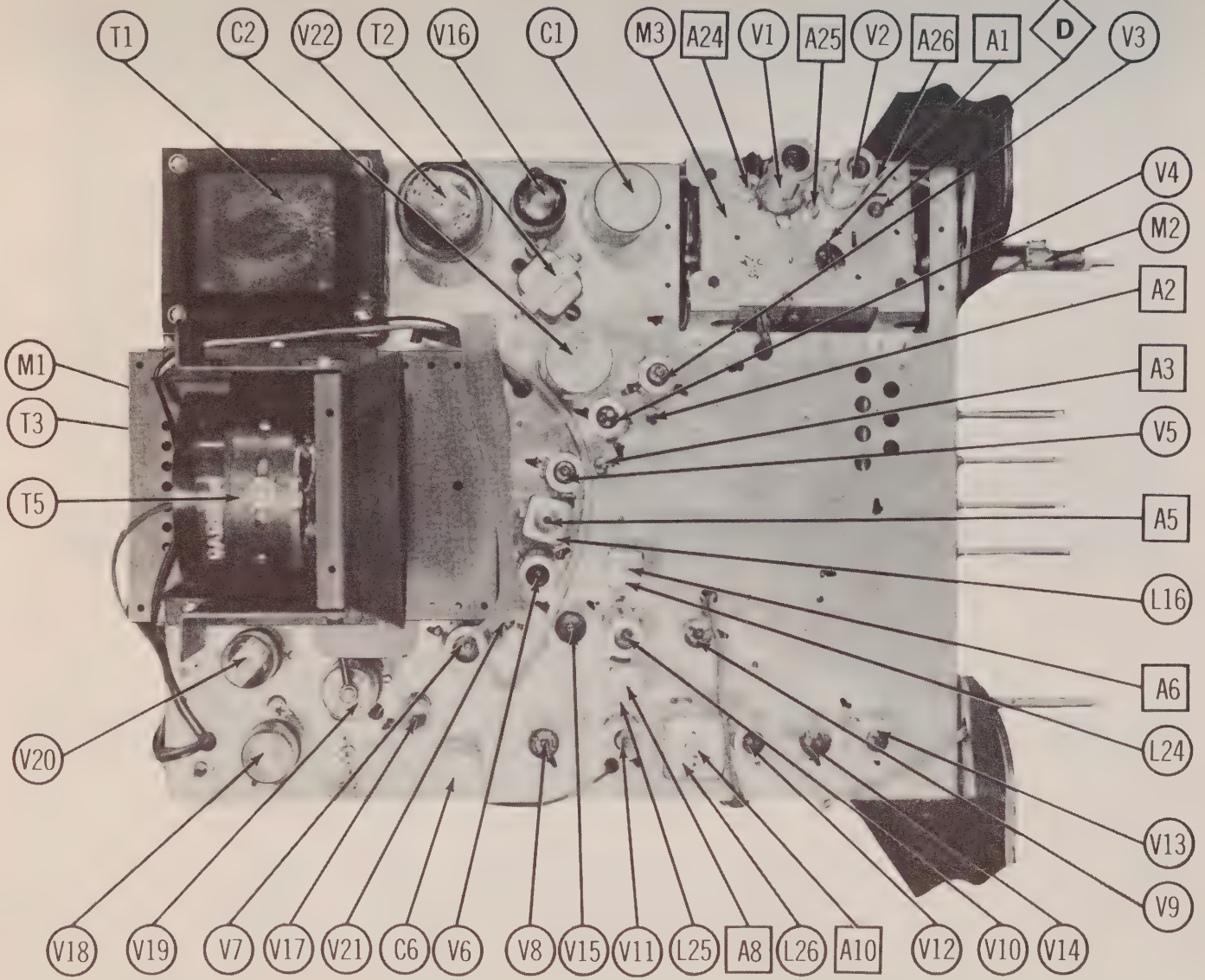
HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

CORONADO MODELS 25TV2-43-9045A, B, 25TV2-43-9060A

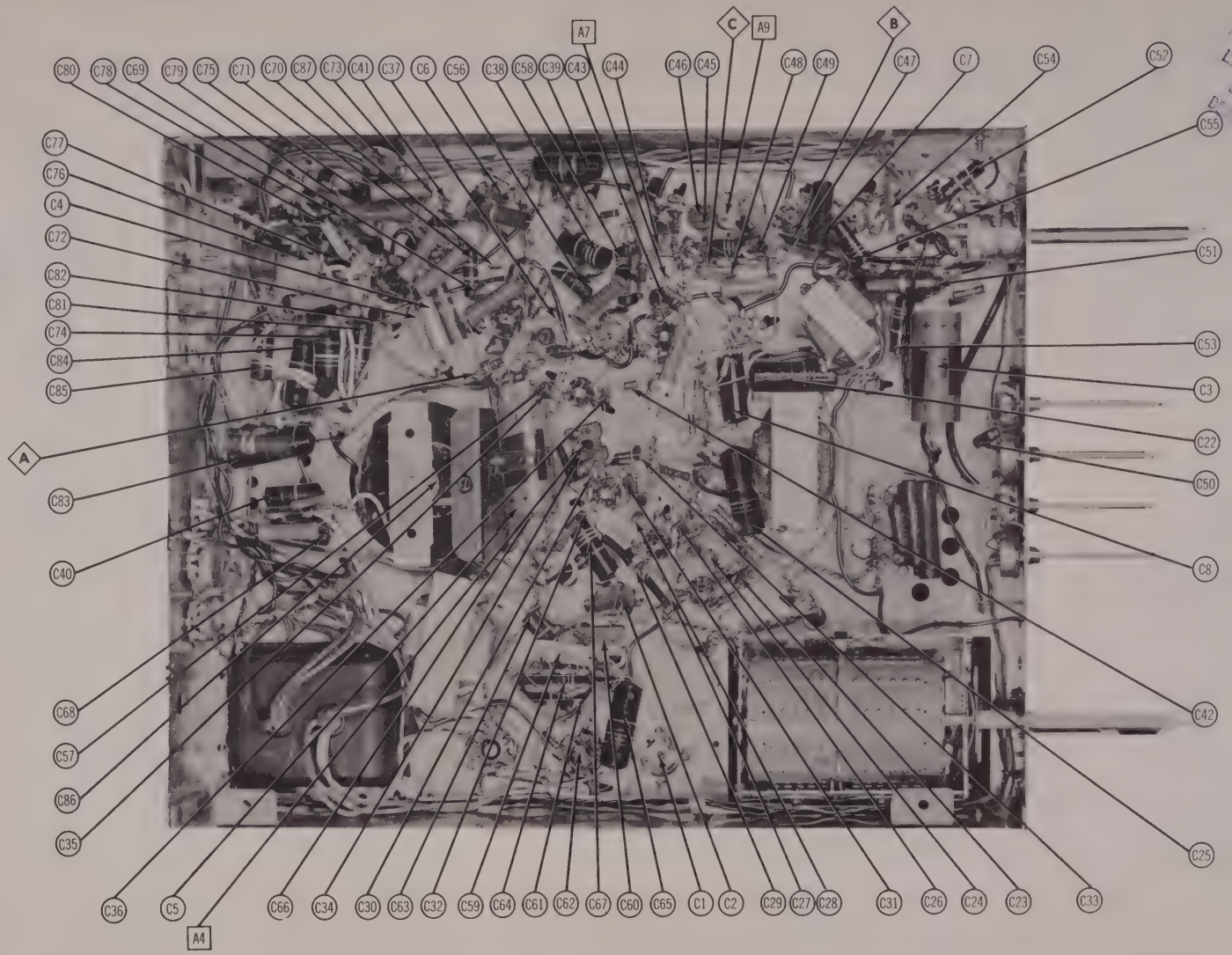


CORONADO MODELS 25TV2-43-9045A, B, 25TV2-43-9060A



CHASSIS TOP VIEW

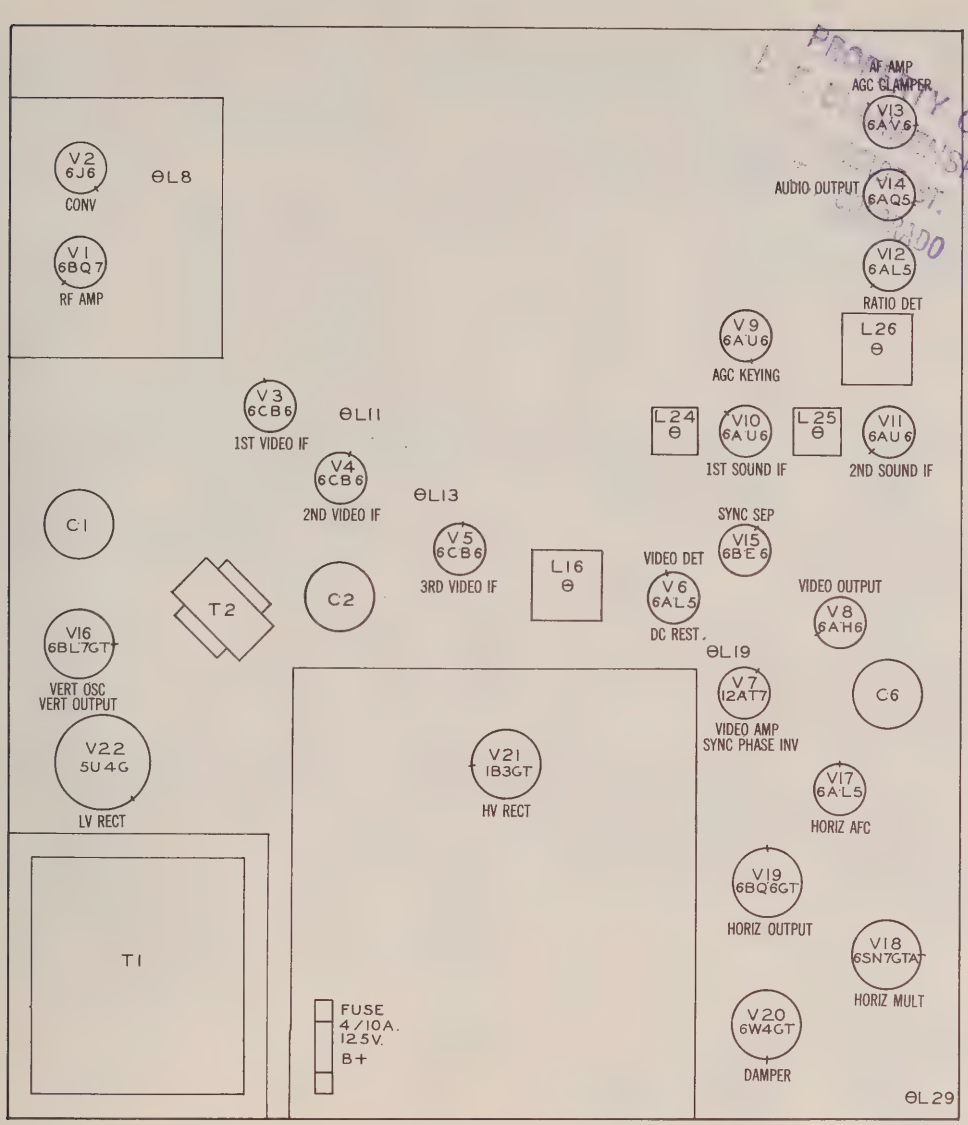
PROOF
T. F. FLAN
3824 MEAD
DENVER, COLOR.



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

PROPERTY OF

TUBE PLACEMENT CHART



TOP VIEW

TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound-V22, Fuse(M1)

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster-V2, V3, V4, V5, V6
No pic, no sound, has snow-V1, V2, V3
No pid, has sound, has raster-V6, V7, V8, V23
Has pic, ho sound-V10, V11, V12, V13, V14
Overloaded picture-V9, V13

SYNC FAILURE
No vert. sync.-V7, V16
No horiz. sync.-V7, V17, V18
No vert. or horiz. sync. V7, V15

SWEEP FAILURE
No raster, has sound-V18, V19, V20, V21, V23
No vertical deflection-V16
Poor vert. linearity or foldover-V16
Poor horiz. linearity or foldover-V18, V19, V20
Narrow picture-V18, V19, V20, V21, V22
Vert. off freq. -V7, V16
Horiz. off freq.-V7, V17, V18

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS--READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard can be eliminated by removing the horizontal multivibrator tube, V18.

VIDEO IF ALIGNMENT

Remove the converter tube, V2 and replace with a 6J6 which as pin 1 removed. This will disable the local oscillator and reduce the possibility of erroneous indications.
Connect the negative lead of a 3 volt battery to the ungrounded side of C25. Connect the positive lead to chassis.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube, V2. Low side to chassis.	25.1MC (Unmod)	Any	DC probe to point ◇A. Common to chassis.	A1	Adjust for maximum deflection.
2.	"	"	23.1MC	"	"	A2	"
3.	"	"	25.9MC	"	"	A3	"
4.	"	"	24.1MC	"	"	A4	"
5.	"	"	21.7MC	"	"	A5	Adjust for MINIMUM deflection.

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Direct	High side to an ungrounded tube shield floating over dummy converter tube, V2. Low side to chassis.	24MC (10MC Swp)	21.7MC 23MC 23.5MC 25.25MC 26.2MC	Any	Vert. amp. to point ◇A. Low side to chassis.		Check for response curve similar to fig.1 If necessary retouch A1 through A4 for desired response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
7.	.01MFD	High side to pin 1, (cathode) of 6AL5 (V6) Low side to chassis.	4.5MC (Unmod)	Any	DC probe to point ◇B. Common to chassis.	A6, A7, A8, A9	Adjust for maximum deflection.
8.	"	"	"	"	DC probe to point ◇C. Common to chassis.	A10	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120 ∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	.01MFD	High side to pin 1 (Cathode) of 6AL5 (V6). Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any	Vert. amp. to point ◇B. Low side to chassis.	A6, A7, A8, A9	Disconnect stabilizer capacitor C7. Adjust for curve of maximum amplitude and symmetry as in fig. 2.
8.	"	"	"	"	"	Vert. Amp. to point ◇C. Low side to chassis.	A10	Reconnect capacitor C7. Adjust so that 4.5MC occurs at center of crossover lines as in fig. 3. SLIGHTLY retouch A9 for maximum amplitude and straightness of crossover lines.

4.5MC TRAP ADJUSTMENT

Turn contrast control to maximum clockwise position.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	Direct	High side to pin 7 of 6AL5 (V12).	Not used	4.5MC (400∿Mod.)	Any	Vert. amp. to pin 2 of picture tube.	A11	Adjust for MINIMUM 400∿ indication on scope.

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.
The oscillator adjustment screws for each channel are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
10	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. amp. to point ◇A. Low side to chassis.	A12	Adjust to place sound marker in notch as in fig. 4. Video marker should be at 50%.
			207MC (10MC Swp)	205.25MC 209.75MC	12		A13	
			201MC (10MC Swp)	199.25MC 203.75MC	11		A14	
			195MC (10MC Swp)	193.25MC 197.75MC	10		A15	
			189MC (10MC Swp)	187.25MC 191.75MC	9		A16	
			183MC (10MC Swp)	181.25MC 185.75MC	8		A17	
			177MC (10MC Swp)	175.25MC 179.75MC	7		A18	
			85MC (10MC Swp)	83.25MC 87.75MC	6		A19	
			79MC (10MC Swp)	77.25MC 81.75MC	5		A20	
			69MC (10MC Swp)	67.25MC 71.75MC	4		A21	
			63MC (10MC Swp)	61.25MC 65.75MC	3		A22	
			57MC (10MC Swp)	55.25MC 59.75MC	2		A23	

ALIGNMENT INSTRUCTIONS (CONT.)

PROPERTY OF L. F. E. ... DENVER ... COLORADO

RF AND MIXER ALIGNMENT

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection. The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
11.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC Swp)	205.25MC 209.75MC	12	Vert. amp. thru 10KΩ to point (D). Low side to chassis.	A24, A25 A26	Adjust for response curve similar to fig. 5. with markers above 90%.
12.	"	"	213MC (10MC Swp)	211.25MC 215.75MC	13	"		Check for response similar to fig. 5, If markers fall below 70% on any channel make slight compromise adjustments of A24, A25 and A26 with channel switch set that channel, Recheck all other channels to see that they have not been seriously affected.
			201MC (10MC Swp)	199.25MC 203.75MC	11			
			195MC (10MC Swp)	193.25MC 197.75MC	10			
			189MC (10MC Swp)	187.25MC 191.75MC	9			
			183MC (10MC Swp)	181.25MC 185.75MC	8			
			177MC (10MC Swp)	175.25MC 179.75MC	7			
			85MC (10MC Swp)	83.25MC 87.75MC	6			
			79MC (10MC Swp)	77.25MC 81.75MC	5			
			69MC (10MC Swp)	67.25MC 71.75MC	4			
			63MC (10MC Swp)	61.25MC 65.75MC	3			
			57MC (10MC Swp)	55.25MC 59.75MC	2			

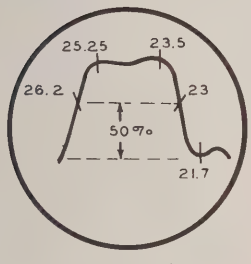


FIG. 1

FIG. 2

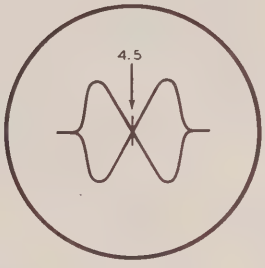


FIG. 3

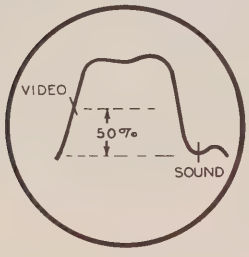


FIG.4

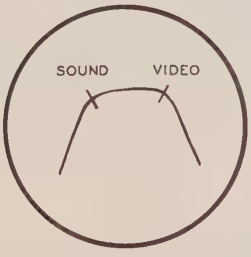
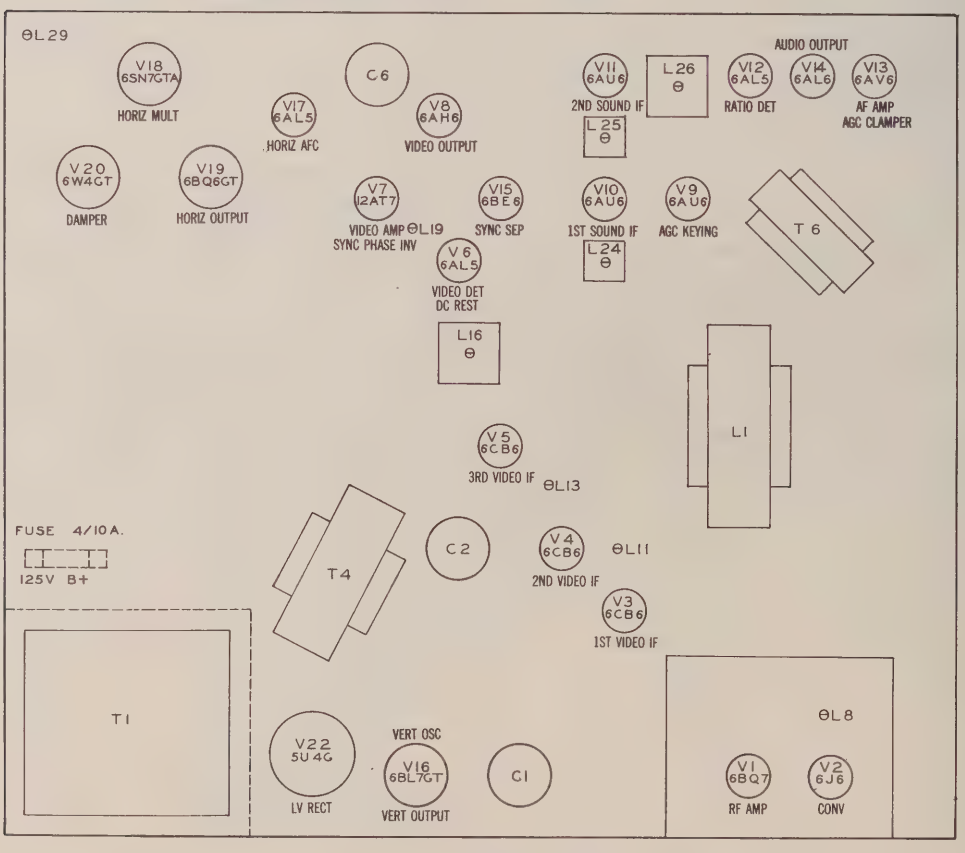


FIG 5

RESISTANCE MEASUREMENTS

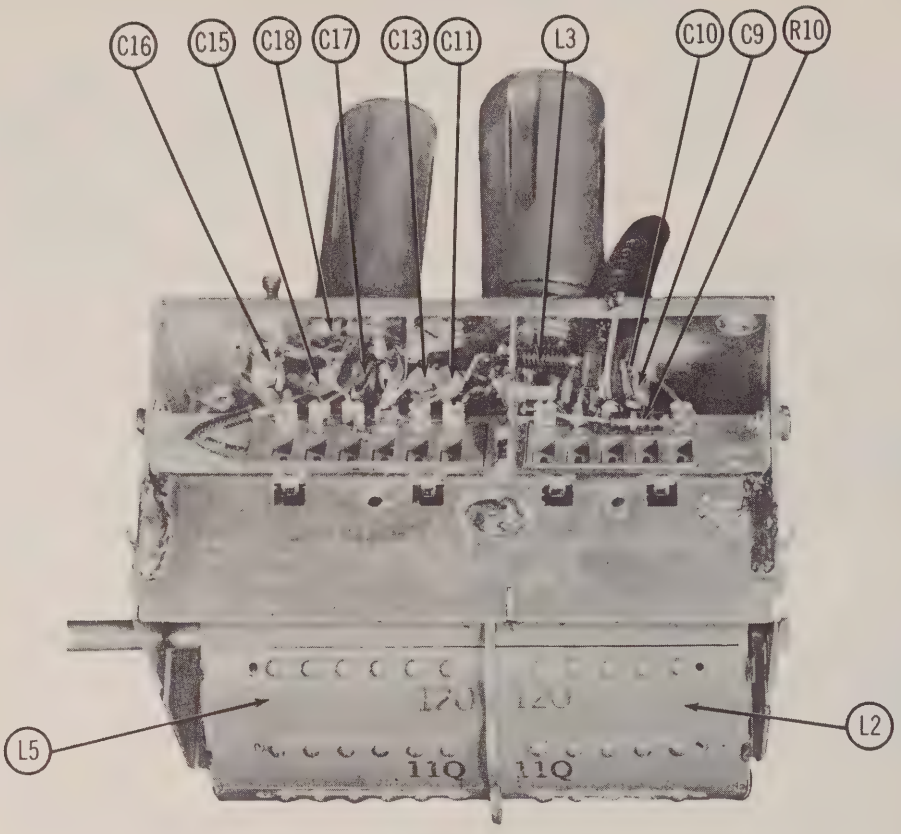
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BQ7	INF	720KΩ	0Ω	.1Ω	0Ω	1.9KΩ	†175KΩ	INF	0Ω
V 2	6J6	†12KΩ	†1.9KΩ	.1Ω	0Ω	230KΩ	10KΩ	0Ω		
V 3	6CB6	110KΩ	47Ω	.1Ω	0Ω	†3.2KΩ	†3.2KΩ	0Ω		
V 4	6CB6	100KΩ	47Ω	.1Ω	0Ω	†3KΩ	†3KΩ	0Ω		
V 5	6CB6	.3Ω	180Ω	.1Ω	0Ω	†3.4KΩ	†3.4KΩ	0Ω		
V 6	6AL5	.2Ω	0Ω	.1Ω	0Ω	1 Meg	0Ω	4.7KΩ		
V 7	12AT7	†9KΩ	4.7KΩ	.3Ω	0Ω	0Ω	†6.9KΩ	†820KΩ	2.2KΩ	.1Ω
V 8	6AH6	1 Meg	0Ω	.1Ω	0Ω	†6.1KΩ	†1.9KΩ	250Ω		
V 9	6AU6	†36KΩ	†1.9KΩ	.1Ω	0Ω	440KΩ	†380Ω	†1.9KΩ		
V 10	6AU6	2.8Ω	0Ω	0Ω	.1Ω	†2.9KΩ	†2.9KΩ	100Ω		
V 11	6AU6	56KΩ	0Ω	.1Ω	0Ω	†2.9KΩ	25KΩ	0Ω		
V 12	6AL5	INF	INF	.1Ω	0Ω	22KΩ	INF	22KΩ		
V 13	6AV6	10 Meg	0Ω	.1Ω	0Ω	670KΩ	670KΩ	550KΩ		
V 14	6AQ5	500KΩ	330Ω	0Ω	.1Ω	†1.9KΩ	†1.4KΩ	500KΩ		
V 15	6BE6	52KΩ	0Ω	.1Ω	0Ω	†820KΩ	70KΩ	1.5Meg		
V 16	6BL7GT	2.3Meg	#1.6Meg	0Ω	1 Meg	#16KΩ	3KΩ	.1Ω	0Ω	
V 17	6AL5	4.8Meg	4.8Meg	.1Ω	0Ω	8.7KΩ	INF	8.7KΩ		
V 18	6SN7GTA	175KΩ	#420KΩ	1.8KΩ	5.1Meg	†5.7KΩ	1.8KΩ	.1Ω	0Ω	
V 19	6BQ6GT	5.7KΩ	0Ω	INF	†11KΩ	470KΩ	#200KΩ	.1Ω	100Ω	Top Cap #16Ω
V 20	6W4GT	†51Ω	INF	190KΩ	4.7Meg	†67Ω	†51Ω	#16Ω	#16Ω	
V 21	1B3GT	PINS 1 - 8 HAVE INF RESISTANCE								Top Cap #416Ω
V 22	5U4G	INF	9.5KΩ	INF	17.4Ω	1.5KΩ	16Ω	INF	9.5KΩ	
V 23	21MP4	0Ω	1.1Meg	Pin 6 †51Ω	Pin 10 #15KΩ	Pin 11 200KΩ	Pin 12 .1Ω			

ALL CONTROLS SET FOR NORMAL OPERATION, NO SIGNAL APPLIED
† MEASURED FROM PIN 2 OF V22
# MEASURED FROM PIN 3 OF V20

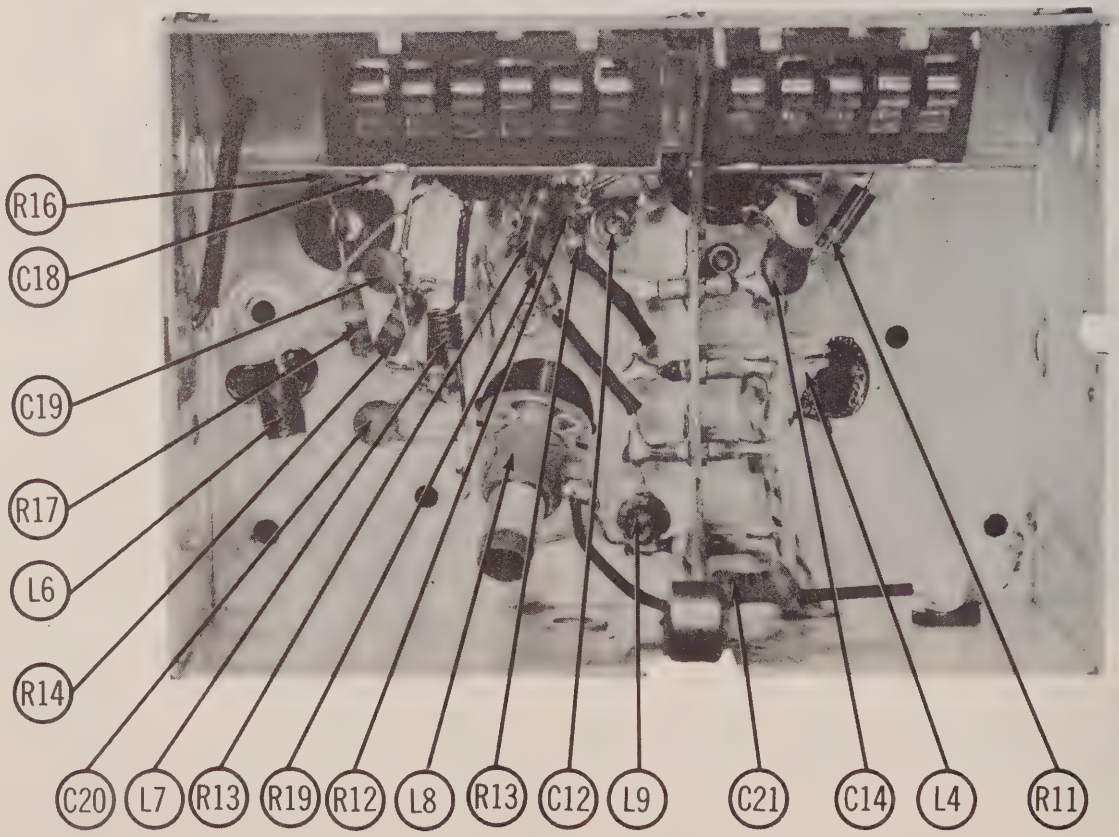


BOTTOM VIEW

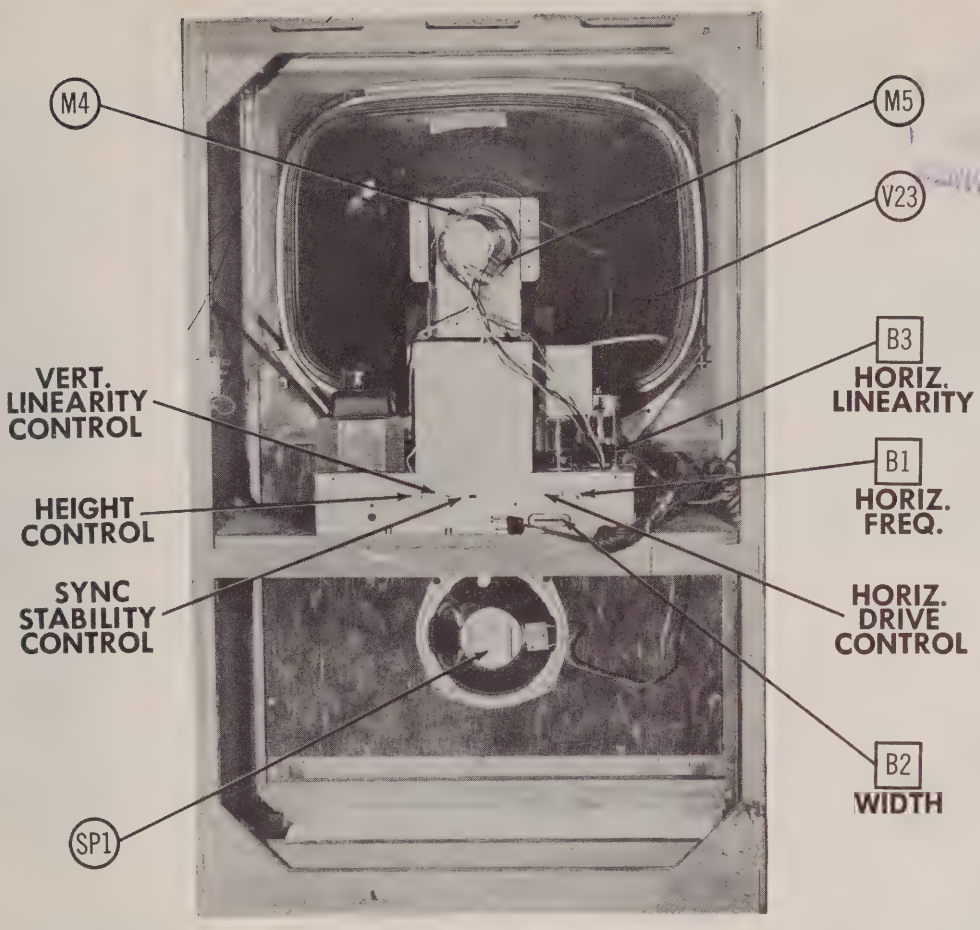
TUBE PLACEMENT CHART



RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Set the horizontal hold control at the center of its range and adjust the horizontal frequency slug (B1) until the picture falls into sync.

Adjust the horizontal drive control for the best compromise between brightness and linearity.

Adjust the width slug (B2) for a picture slightly wider than necessary to fill the picture mask horizontally.

Adjust the horizontal linearity slug (B3) for a picture that is symmetrical from left to right.

SYNC STABILITY CONTROL ADJUSTMENT

Tune set to strongest TV signal available.

Turn the sync stability control clockwise until bending of the picture occurs at the top, then turn counter clockwise until the bending just disappears.

DISASSEMBLY INSTRUCTIONS

1. Remove 4 push on type control knobs from front panel.
2. Remove 2 wood & 2 metal screws, Remove rear cover.
3. Disconnect built-in antenna & speaker.
4. Remove 5 chassis bolts. Remove chassis.
5. Remove 4 speaker nuts. Remove speaker.

NOTE:
FOR PICTURE TUBE REMOVAL IT IS NECESSARY TO REMOVE CHASSIS AS OUTLINED ABOVE.

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: CORONADO PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amplifier	6BQ7	6BQ7	9AJ	
V2	Converter	6J6	6J6	7BF	
V3	1st. Video IF Amp.	6CB6	6CB6	7CM	
V4	2nd. Video IF Amp.	6CB6	6CB6	7CM	
V5	3rd. Video IF Amp.	6CB6	6CB6	7CM	
V6	Video Detector - DC Restorer	6AL5	6AL5	6BT	
V7	Video Amplifier - Sync Phase Inv.	12AT7	12AT7	9A	
V8	Video Output	6AH6	6AH6	7BK	
V9	AGC Keying	6AU6	6AU6	7BK	
V10	1st. Sound IF Amp.	6AU6	6AU6	7BK	
V11	2nd. Sound IF Amp.	6AU6	6AU6	7BK	
V12	Ratio Detector	6AL5	6AL5	6BT	
V13	AF Amplifier - AGC Clamper	6AV6	6AV6	7BT	
V14	Audio Output	6AQ5	6AQ5	7BZ	
V15	Sync Separator	6BE6	6BE6	7CH	
V16	Vert. Oscillator - Vert. Output	6BL7GT	6BL7GT	8BD	
V17	Horiz. AFC	6AL5	6AL5	6BT	
V18	Horiz. Mult.	6SN7GTA	6SN7GTA	8BD	
V19	Horiz. Output	6BQ6GT	6BQ6GT	6AM	
V20	Damper	6W4GT	6W4GT	6CG	
V21	HV Rectifier	1B3GT	1B3GT	3C	
V22	LV Rectifier	5U4G	5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: CORONADO PART No.	REPLACEMENT DATA: SYLVANIA PART No.	RTMA BASE TYPE	NOTES
V33	21MP4		12C	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CORONADO PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: MALLORY PART No.	REPLACEMENT DATA: SPRAGUE PART No.	NOTES
C1A	▲80	475	45X390	AFH3-46		UPT84245		FP386	TVL-3792	
B	▲50	450								Note 1
C2A	▲80	450	45X391	AFH3-462		UPT4445-V10		FP375	TVL-3764	
B	▲100	50								
C3	30	400	45X393	PRS450/30		BR3045A		TC77	TVA-1711	
C4	5	25	45X378	PRS150/4		BBR-5-50		TC30	TVA-1203	
C5	30	400	45X393	PRS450/30		BR3045A		TC77	TVA-1711	
C6A	▲20	400	45X392	AFH3-LT5		UPT2145-V5		FP386	TVL-3751	
B	▲10	400								
C	40	50								
C7	5	25	45X378	PRS150/4		BBR-5-50		TC30	TVA-1203	
C8	5	25	45X378	PRS150/4		BBR-5-50		TC30	TVA-1203	Note 2
C9	3-9		31B-207		829-10					
C10	3.6		CD8C3R6C				NP0K-1R5	ZT-5515	5TCCB-V15	
C11	1.5		CD8C1R5M	SIL.5NP0	TCZ-1.5					
C12	.5-3		31B-206		829-5		N750K-470	CT565A		
C13	47		CD8C470K	SI47N750	TCN-47			NT-5447	5TCU-Q47	
C14	1000		CD8X102Z	BPD-001	DD-102	TM5D1	N750K-470	NT-5447	5TCU-Q47	
C15	47		CD8Q470K	SI47N750	TCN-47		801-001	DC-521	5HK-D1	
C16	.5-3		31B-206		829-3		N750K-470	CT565A		
C17	10		CD10C100K	SI10N750	TCN-10		N750K-100	NT-541	5TCU-Q1	
C18	5		CD8U050C	SI5NP0	TCZ-4.7		NP0K-050	ZT-555	5TCCB-V47	
C19	1000		CD8X102Z	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C20	6.8		CD8C6R8C	SI6.8NP0	TCZ-6.8		NP0K-6R8	ZT-5568	5TCCB-V68	
C21	120		13D-055	SII20	D6-121	TM5T13	GP2K-121	UC-5512	5GA-T12	
C22	.22	200	RCP10M2224M	P488-22		PTE4P22		PT4025	2TM-P22	
C23A	1000		80X3	BPD-2X001	DD-3-102	TM5DD1	812-001	DCD-521	5HK-2D1	
B	1000									
C24	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C25	.22	200	RCP10M2224M	P488-22		PTE4P22		PT4025	2TM-P22	
C26A	1000		80X3	BPD-2X001	DD-2-102	TM5DD1	812-001	DCD-521	5HK-2D1	
B	1000									
C27	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C28	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C29	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C30	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C31	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C32	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C33	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C34	47		47X603	SI47	D6-470	5R5Q5	GP1K-470	UC-5447	5GA-Q47	
C35	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C36	5		47X562	SI5NP0	TCZ-4.7		NP0K-050	ZT-555	5TCCB-V47	
C37	360	500	47X568							
C38	.047	400	RCP10M4743M	P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C39	.1	400	RCP10M4104M	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C40	.1	200	RCP10M2104M	P288-1	DF-104	PJ2P1		PT401	2TM-P1	
C41	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C42	1.5		47X584	SIL.5NP0	TCZ-1.5		NP0K-1R5	ZT-5515	5TCCB-V15	
C43	5000		47X507	BPD-005	DD-502	TM5D5	8U-005	DC-525	5HK-D5	
C44	100		47X504	SII00	D6-101	TM5T1	GP1K-101	SC-531	5GA-T1	
C45	5000		47X507	BPD-005	DD-502	TM5D5	8U-005	DC-525	5HK-D5	
C46	5000		47X507	BPD-005	DD-502	TM5D5	8U-005	DC-525	5HK-D5	
C47	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C48	470	500	47X525	1469-0005	D6-471	5W5T5	GP3K-471	MC-245	1FM-35	
C49	.047	200	RCP10M2473M	P288-047	DF-503	PTE4S47		PT4147	2TM-S47	
C50	.0047	400	RCP10M4472M	P488-0047	D6-472	PTE5D47	GP2-333-472	TP6247	6TM-D47	
C51	.0047	400	RCP10M4472M	P488-0047	D6-472	PTE5D47	GP2-333-472	TP6247	6TM-D47	
C52	.01	400	RCP10M4103M	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C53	.047	400	RCP10M4473M	P488-047	DF-503	PTE4S47		PT4147	4TM-S47	

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CORONADO PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: MALLORY PART No.	REPLACEMENT DATA: SPRAGUE PART No.	NOTES
C54A	.01									
B	250		†76X5		†PC-80		†1404-01		†103C1	
C										
C55	.0047	600	RCP10M6473M	P688-0047	D6-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	
C56	.01	400	RCP10M4103M	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C57	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C58	.047	400	RCP10M4473M	P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C59A	.002			P688-002		PTE6D2		PT623		
B	.005		▪76X7	P688-005	▪PC-100	PTE6D5	▪1405-01	PT625	▪101C1	
C	.005			P688-005		PTE5D5		PT625		
C60	4700	500	47X543	1464-005		DDR5D5		MC8465	MS-35	
C61	.0047	400	RCP10M4472M	P688-0047	D6-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	
C62	100		47X604	SII00	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C63	.01	600	RCP10M6103M	P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C64	.047	600	RCP10M6473M	P688-047	DF-503	PTE6S47		PT6147	6TM-S47	
C65	.1	600	RCP10M6104M	P688-1	DF-104	PTE6P1		PT601	6TM-P1	
C66	.1	600	RCP10M6104M	P688-1	DF-104	PTE6P1		PT601	6TM-P1	
C67	.047	600	RCP10M6473M	P688-047	DF-503	PTE6S47		PT6147	6TM-S47	
C68	.015	600	RCP10M6153M	P688-015		PTE6S15			6TM-S15	
C69	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C70	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C71	.01	400	RCP10M4103M	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C72	270	500	RCM2DA271K	1469-0003		SR5T3		MC8241	MS-33	
C73	.0047	600	RCP10M6472M	P688-0047	D6-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	
C74	.22	200	RCP10M2224M	P488-22		PTE4P22		PT4025	2TM-P22	
C75	.047	200	RCP10M2473M	P288-047	DF-503	PTE4S47		PT4147	2TM-S47	
C76	4700	500	47X543	1464-005		DDR5D5		MCB465	MS-35	
C77	.1	600	RCP10M6104M	P688-1	DF-104	PTE6P1		PT601	6TM-P1	
C78	330	500	47X570	1469-00035						
C79	330	500	47X570	1469-00035						
C80	270	500	RCM2DA271K	1469-0003		SR5T3		MCB241	MS-33	Note 3
C81	.047	400	RCP10M4473M	P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C82	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C83	.15	400	RCP10M4154M	P488-15		PTE4P15			4TM-P15	
C84	.1	400	RCP10M4104M	P488-1		PTE4P1		PT401	4TM-P1	
C85	.047	400	RCP10M4473M	P488-047		PTE4S47		PT4147	4TM-S47	
C86	500	20000	47X560	HV20C	TV3-502	MMC-20TS	413-501		20DK-T5	
C87A	10000		†76X8	BPD-01	DD-3-103	TM5DS1	†321-01	DC-511	5HK-2S1	
B	10000			BPD-01			†321-01	DC-511		

Note 1. Some models use 80MFD in this application.
Note 2. Some models use 4MFD in this application (Part #45X391)
Note 3. Some models use 180MMF in this application (Part #47X564)
▪ Items C59A, C59B, C59C, R75A, R75B, R75C are combined in one unit.
† Items C54A, C54B, C54C, R61A, R61B are combined in one unit.
When replacing items separately C54B, C54C should total 250MMF.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CORONADO PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: MALLORY PART No.	INSTALLATION NOTES
R1A	50KΩ	½	40X361A	Q11-123	AG-44-S	AB-31	U-35	Horiz. Hold
B	Shaft		Not Req.	Not Req.	R5-3/16	AK-4	Not Req.	Attach to R1A
R2A	5KΩ	½	40X362	Q11-118	AG-27-S	AB-14	SU-20	Vert Linearity
B	Shaft		Not Req.	Not Req.	FK8-1/4	AK-1	Not Req.	Attach to R2A
R3A	2.5Meg	½	40X364	Q11-339	AG-84-S	AB-33	SU-565	Height-Note 1
B	Shaft		Not Req.	Not Req.	FK8-1/4	AK-1	Not Req.	Attach to R3A
R4A	500KΩ	½	B40X333-A	Q11-133	AG-58-S	AB-59	U-50	Brightness
B	Shaft		Not Req.	Not Req.	R8-3/16	AK-4	Not Req.	Attach to R4A
R5A	150KΩ	½	B40X331-A	Q11-123	AG-52-S	AB-46	U-45	Horiz. Drive
B	Shaft		Not Req.	Not Req.	FK8-1/4	AK-1	Not Req.	Attach to R5A
R6A	1 Meg	½	B40X334-D	Q11-137	AG-61-S	AB-59	U-54	Tone
B	Shaft		Not Req.	Not Req.	R3-3/16	AK-4	Not Req.	Attach to R6A
R7A	1 Meg	½	B40X334-D	Q11-137	AG-61-S	AB-69	U-54	Vert. Hold
B	Shaft		Not Req.	Not Req.	R5-3/16	AK-4	Not Req.	Attach to R7A
R8	7.5Meg	½	40X289C					Sync. Stability
R9A	3000Ω	½	78X12	QJ-337 ▪				Contrast-Panel-Note 2
B	1 Meg							Volume & Sw. - Tapped ② 200KΩ - Rear

▪ CONCENTRIKIT EQUIVALENT, KIT K-2, BASE ELEMENTS & SHAFTS B17-112 & P1-310 (Panel) B13-137 & R2-322 (Rear) & SWITCH 76-2

RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: CORONADO PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R10	15KΩ	½	12A-004	BTS-15K	
R11	47KΩ	½	12A-039	BTS-47K	
R12	100KΩ	½	12A-054		
R13	100KΩ	½	12A-166	BTS-100K	
R14	160KΩ-5%	½	12A-167	BTS-160K-5%	
R15	150KΩ	½	12A-183	BTS-150K	
R16	10KΩ	½	12A-040	BTS-10K	
R17	220KΩ	½	12A-041	BTS-220K	
R18	10KΩ	½	12A-040	BTS-10K	
R19	10KΩ	½	12A-040	BTS-10K	
R20	8200Ω	½	B83222		
R21	47Ω	½	B83470		
R22	1000Ω	½	B85102	BTS-1000	
R23	1000Ω	½	B85102	BTS-1000	
R24	150Ω	½	B85151	BTS-150	
R25	22KΩ	½	B83223		
R26	47Ω	½	B83470		
R27	1000Ω	½	B85102	BTS-1000	
R28	150Ω	½	B85151	BTS-150	
R29	22KΩ	½	B83223		
R30	180Ω	½	B84181	BTS-180	
R31	1500Ω	½	B84153	BTS-1500	
R32	3.9Meg-5%	½	B83395	BTS-3.9Meg-5%	
R33	330KΩ-5%	½	B83334	BTS-330K-5%	
R34	470KΩ	½	B84474	BTS-470K	
R35	47KΩ	½	B84473	BTS-47K	
R36	100KΩ	½	B84104	BTS-100K	
R37	4700Ω-5%	½	B83472	BTS-4700-5%	
R38	33KΩ	½	B84333	BTS-33K	
R39	5600Ω	½	C84562	BTA-5600	
R40	1500Ω	½	B84152	BTS-1500	
R41	1 Meg	½	B84105	BTS-1 Meg	
R42	100Ω	½	B84141	BTS-100	
R43	4700-5%	1	C84472	BTA-4700-5%	
R44	22KΩ	½	B84223	BTS-22K	
R45	100KΩ	½	B85104	BTS-100K	
R46	100KΩ	½	B85104	BTS-100K	
R47	47KΩ	½	B85473	BTS-47K	
R48	1 Meg	½	B84105	BTS-1 Meg	
R49	100Ω	½	B84101	BTS-100	
R50	1000Ω	½	B85102	BTS-1000	
R51	56KΩ	½	B84563		
R52	100KΩ	½	B84104		
R53	1000Ω	½	B85102	BTS-1000	
R54	33KΩ	½	B84333	BTS-33K	
R55	270Ω	½	B84271	BTS-270	
R56	68KΩ	½	B84683	BTS-68K	
R57	22KΩ	½	B84223	BTS-22K	
R58	22KΩ	½	B84223	BTS-22K	

RESISTORS (CONT.)

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: CORONADO PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R59	68KΩ	½	B84683	BTS 68K	
R60	10 Meg	½	B85108	BTS-10 Meg	
R61A	500KΩ	½	†76X5		
B	500KΩ	½			
R62	47KΩ	½	B85473	BTS-47K	
R63	330Ω	1	C84331	BTA-330	
R64	1000Ω	3	D84103	BTB-1000	
R65	47KΩ	½	B84473	BTS-47K	
R66	10KΩ	½	B84103	BTS-10K	
R67	270K Ω	½	B84274	BTS-270K	
R68	1.5 Meg	½	B84155	BTS-1.5 Meg	
R69	68KΩ	½	B84683	BTS-68K	
R70	820KΩ	½	B84824	BTS-820K	
R71	2200Ω	½	B83222	BTS-2200	
R72	3300Ω	½	B84332	BTS-3300	
R73	2200Ω-5%	½	B83222	BTS-2200-5%	
R74	10000Ω	2	D84103	BTB-1000	
R75A	22KΩ	½		BTS-22K	
B	8200Ω	½	▪76X7	BTS-8200	
C	8200	½		BTS-8200	
R76	470KΩ	½	B85474	BTS-470K	
R77	1.5 Meg	½	B84155	BTS-1.5 Meg	
R78	1.2 Meg	½	B84125	BTS-1.2 Meg	
R79	10KΩ	½	B84103	BTS-10K	
R80	180KΩ	½	B84184	BTS-180K	
R81	2.2 Meg	½	B84225	BTS-2.2 Meg	
R82	1500Ω	½	B84152	BTS-1500	
R83	1 Meg	½	B84105	BTS-1 Meg	
R84	15KΩ	½	D84153	BTB-15K	
R85	2200Ω	½	B84222	BTS-2200	
R86	100KΩ	½	B84104	BTS-100K	
R87	4.7Meg	½	B85475	BTS-4.7Meg	
R88	100KΩ	½	B84104	BTS-100K	
R89	27KΩ	½	B84273	BTS-27K	
R90	470KΩ	½	B85474	BTS-470K	
R91	6800Ω	½	C84682	BTS-6800	
R92	6800Ω	½	C84682	BTS-6800	
R93	33KΩ	½	B84333	BTS-33K	
R94	1800Ω-5%	½	B83182	BTS-1800-5%	
R95	5600Ω	1	C83562	BTA-5600	
R96	150KΩ	½	B85154	BTS-150K	
R97	220KΩ	½	B85224	BTS-220K	
R98	100KΩ	½	B84104	BTS-100K	
R99	5600Ω	½	B84562	BTS-5600	
R100	470KΩ	½	B84474	BTS-470K	
R101	100Ω	3	D84101	BW-2-100	
R102	15KΩ	2	D84153	BTB-15K	Note 1
R103	56KΩ	½	B84563	BTS-56K	Note 2
R104	5.1Ω	½	43X339		
R105	1 Meg	½	C85105		
R106	10KΩ	5	43X372	1 3/4A-10K	
R107	1500Ω	15	43X275	2D-1500	
R108	330Ω	10	43X273	1 3/4-A-350	
R109	270KΩ	½	B85274	BTS-270KG	

Note 1 Some models use a 12KΩ resistor in this application.
Note 2 Not used in all models
† Items R61A, R61B, C54A, C54B, C54C are combined in one unit.
▪ Items R75A, R75B, R75C, C59A, C59B, C59C are combined in one unit.

TRANSFORMER (POWER)

ITEM No.	RATING	REPLACEMENT DATA: CORONADO PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	REPLACEMENT DATA: TRIAD PART No.
T1	PRI. 117VAC @ 1.82 A SEC. 1 800VCT @ 275MA SEC. 2 5VAC @ 3A SEC. 3 6.3VAC @ 1.1A SEC. 4 6.3VAC 8.8A	53X324		P-3027 P-3074 ①		

① Use for Secondary #3.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: CORONADO PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	REPLACEMENT DATA: TRIAD PART No.	NOTES
T2	194Ω	1100Ω	54X8	A-8125	A-3000 ①	TBO-2 ①	A-97X	Vert. Osc. Trans. Horiz. Output Trans.
T3	640Ω tap 8Ω		53X328					
	10 Ω, 8Ω	SEC. 3 0Ω						
	15 Ω,							
	241Ω, 40Ω							
T4	1600Ω		51X156	A-8141	A-3039	A-104X		Vert. Output Trans.
	Tap ②							
	4.5Ω							
T5A	1.4Ω		9A2256	MDF-70	TY-3	Y-17		Horiz. Deflection Coils
B	50Ω		9A2274 ③					Vert. Deflection Coils

1. Drill one new mtg. hole.
2. Alternate deflection yoke.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: CORONADO PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	REPLACEMENT DATA: TRIAD PART No.	NOTES
T6	5.8KΩ	3.2Ω	495Ω	.9Ω	51X150A	A-3850	A-2981	RO-301	S-3X	

SPEAKER

ITEM No.	RATINGS: SIZE	RATINGS: FIELD	RATINGS: V. C. IMP.	REPLACEMENT DATA: CORONADO PART No.	REPLACEMENT DATA: JENSEN PART No.	REPLACEMENT DATA: QUAM PART No.	NOTES
SP1	8"	PM	3.7Ω	C-12A477 12A504 ① 12A502 ②	ST-115 Mod. P8-V	8A2I	① Alternate 6" PM Speaker ② Alternate 12" PM speaker

FILTER CHOKE

ITEM No.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D. C. RESISTANCE	RATINGS: INDUCTANCE (D. CURRENT 1000 ℃)	REPLACEMENT DATA: CORONADO PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	REPLACEMENT DATA: TRIAD PART No.
L1	.250A	51Ω	2.2 Hy.	52X90	C-2321 ①	C-2991 ①	TH-3300 ①	C-25A

① Drill one new mtg. hole.

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: CORONADO PART No.	REPLACEMENT DATA: MERIT PART No.	NOTES
L2	Ant. Coil	0Ω	0Ω	9A2278-1		Channel 2
L3	RF Choke	0Ω		31B-296		
L4	Fil. Choke	0Ω		34A-546		
L5	RF, Mixer Grid & Osc. Coils	0Ω		9A2279-1		Channel 2
L6	Fil. Choke	0Ω		34A575		
L7	RF Choke	0Ω		31B-295		

CORONADO MODELS 25TV2-43-9045A, B, 25TV2-43-9060A

PARTS LIST AND DESCRIPTIONS (Continued)

(COILS RF-IF) CONT.

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	CORONADO PART No.	MERIT PART No.	
L8	1st. Video IF	1.1Ω		31A-078	TV-112	
L9	RF Choke	1.2Ω		31B-239		
L10	Fil. Choke	0Ω		9A2033		
L11	2nd. Video IF	.3Ω	.3Ω	9A2230		
L12	Fil. Choke	0Ω		9A2033		
L13	3rd. Video IF	.3Ω	.3Ω	9A2230		
L14	Fil. Choke	0Ω		9A2033		
L15	RF Choke	2.5Ω		9A1979	TV-180	36 Microhenries
L16	4th. Video IF	.1Ω		9A2226	TV-101	Includes Trap
L17	Series Peaking Coil	7.5Ω		36A10		60 Microhenries wound 22K resistor
L18	Shunt Peaking Coil	24Ω		36A11		500 Microhenries
L19	4.5MC Trap	.3Ω		9A2074	TV-151	
L20	Series Peaking Coil	2.5Ω		9A1979	TV-180	36 Microhenries
L21	Shunt Peaking Coil	7.5Ω		36A10		60 Microhenries wound on 1.5K resistor
L22	Series Peaking Coil	12.5Ω		36A12	TV-182	160 Microhenries wound on 22K resistor
L23	Shunt Peaking Coil	14Ω		36A2	TV-184	190 Microhenries
L24	1st. Sound IF	2.8Ω		9A2168		
L25	2nd. Sound IF	1.7Ω	1.7Ω	9A2170	TV-113	
L26	Ratio Det.	3.4Ω	.7 CT	9A2269		Tertiary winding .15Ω
L27	Horiz. Osc.	48Ω		9A2096	TV-163	
L28	Width Coil	.6Ω		9A2183		
L29	Horiz. Lin.	16Ω		9A2262		

FUSES

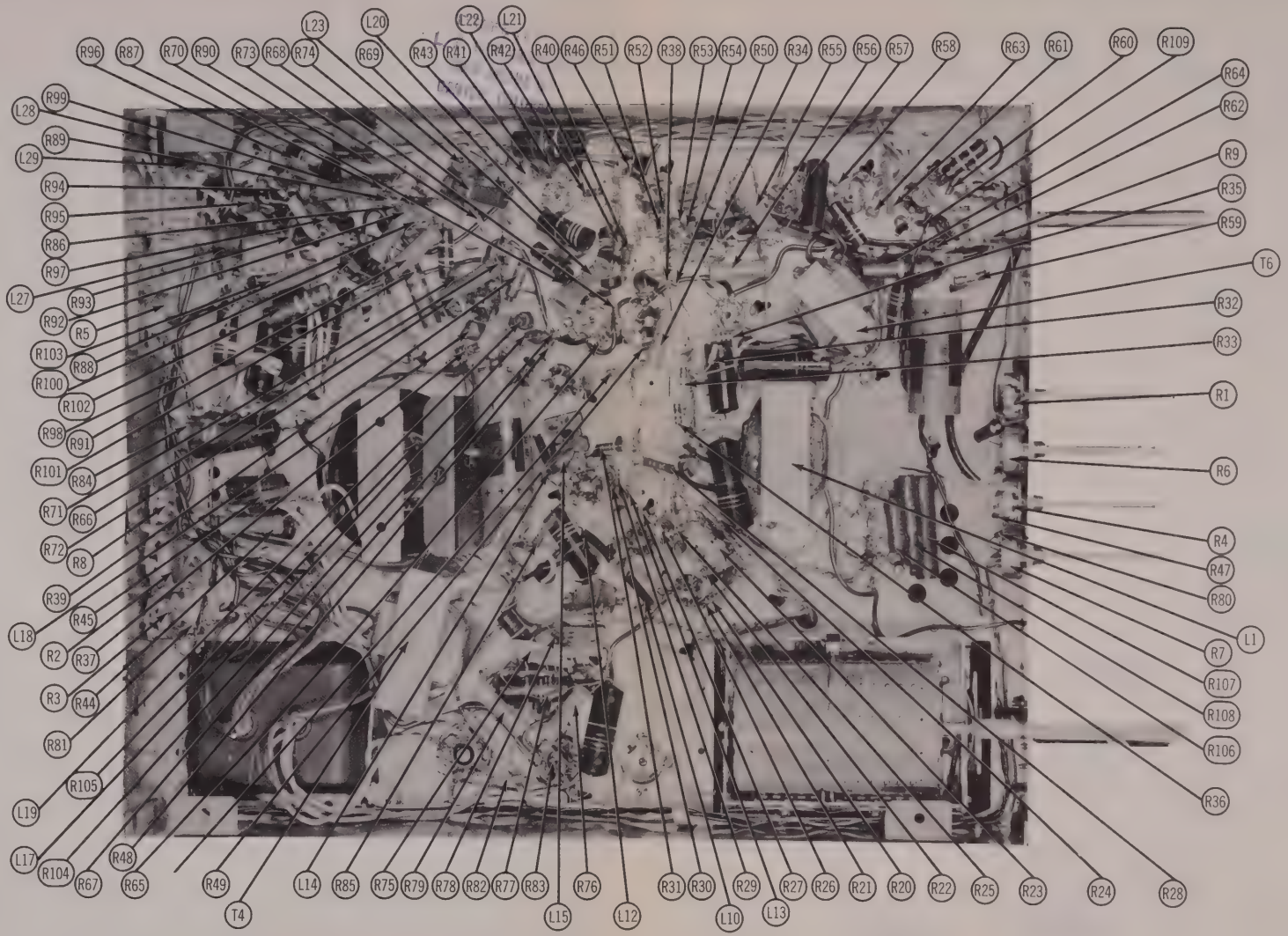
ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			CORONADO PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG-Slo-Blo	4/10 A. 125V	16X147-3	16X146	313.400	357001	MDL-4/10	4405

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					CORONADO PART No.		
M2	Bayonet	7.5	.2	white	7A32		Type #51

MISCELLANEOUS

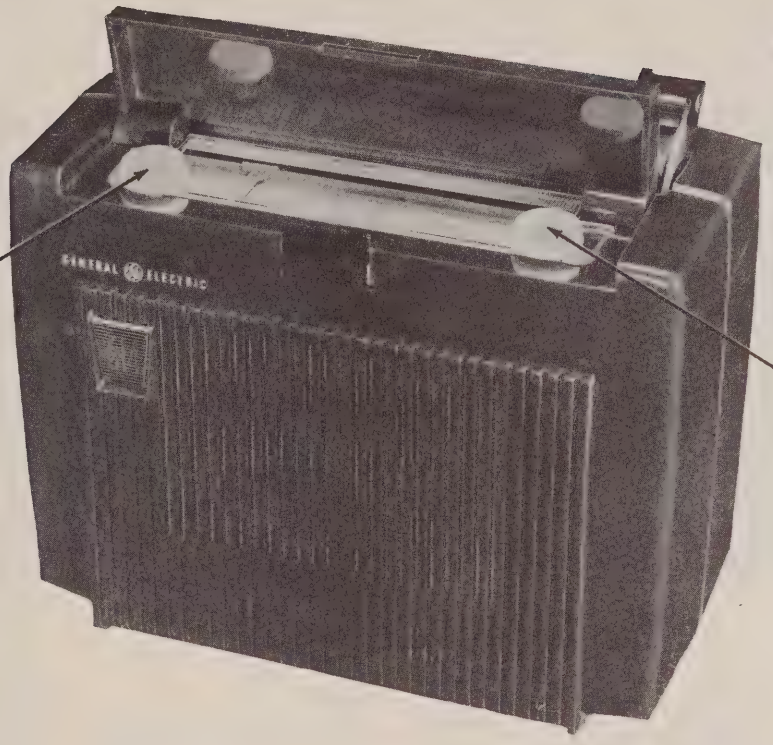
ITEM No.	PART NAME	CORONADO PART No.	NOTES
M3	RF Tuner	25A1095	
M4	Centering Magnet	2A426	
M5	Ion Trap	2A407	
	Ant. Coils	9A2278-2	Channel #3
	Ant. Coils	9A2278-3	Channel #4
	Ant. Coils	9A2278-4	Channel #5
	Ant. Coils	9A2278-5	Channel #6
	Ant. Coils	9A2278-6	Channel #7
	Ant. Coils	9A2278-7	Channel #8
	Ant. Coils	9A2278-8	Channel #9
	Ant. Coils	9A2278-9	Channel #10
	Ant. Coils	9A2278-10	Channel #11
	Ant. Coils	9A2278-11	Channel #12
	Ant. Coils	9A2278-12	Channel #13
	RF, Mixer Grid & Osc. Coil	9A2279-2	Channel #3
	RF, Mixer Grid & Osc. Coil	9A2279-3	Channel #4
	RF, Mixer Grid & Osc. Coil	9A2279-4	Channel #5
	RF, Mixer Grid & Osc. Coils	9A2279-5	Channel #6
	RF, Mixer Grid & Osc. Coil	9A2279-6	Channel #7
	RF, Mixer Grid & Osc. Coil	9A2279-7	Channel #8
	RF, Mixer Grid & Osc. Coil	9A2279-8	Channel #9
	RF, Mixer Grid & Osc. Coil	9A2279-9	Channel #10
	RF, Mixer Grid & Osc. Coil	9A2279-10	Channel #11
	RF, Mixer Grid & Osc. Coil	9A2279-11	Channel #12
	RF, Mixer Grid & Osc. Coil	9A2279-12	Channel #13
	Knob	10A779	Off/On Volume
	Knob	10A812-1	Channel Selector
	Knob	10A821-1	Contrast
	Knob	10A-820-1	Fine Tuning



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

PROPERTY OF
L. F. BLANKENSHIP
3024 MEADE ST.
DENVER, COLORADO

GENERAL ELECTRIC
MODELS 614, 615



GENERAL ELECTRIC
MODELS 614, 615

TRADE NAME	General Electric Models 614, 615
MANUFACTURER	General Electric Co., Electronics Dept., Electronics Park, Syracuse, N.Y.
TYPE SET	Three Power Portable Superheterodyne Receiver
TUBES (Five)	Types 1T4 RF Amp., 1R5 RF Amp., 1T4 IF Amp., 1U5 Det.-AVC-AF Amp., 3V4 Audio Output
POWER SUPPLY	105-120 Volts AC/DC (or) 9 Volts "A" Supply & 90 Volts "B" Supply in Pack Form
RATING	.15 Amp. @ 117 Volts AC (or) 50MA @ 9 Volts DC & 15MA @ 90 Volts DC
TUNING RANGE—BROADCAST	540-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set dial pointer, turn tuning gang fully closed and set pointer at low frequency limit of dial.
Use battery power, if possible. If AC power is used, use an isolation transformer when available. If not, connect a .1MFD capacitor in series with low side of the signal generator and B-.
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.05MFD	High side to pin 6 (grid) of 1R5 (V2). Low side to B-.	455KC (400%Mod)	Tuning gang fully closed	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.	"	High side to pin 6 (grid) of 1T4 (V1). Low side to B-.	1670KC	"	"	A5	Adjust for maximum output.
3.	"	"	1500KC	Tune for maximum signal	"	A6	"
4.	"	"	580KC	"	"	A7	Adjust for maximum output. Repeat steps 3 and 4.
5.		Loop	1500KC	"	"	A8	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: General Electric PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	INSTALLATION NOTES
V1	RF Amplifier	1T4	1T4	6AR	
V2	Converter	1R5	1R5	7AT	
V3	IF Amplifier	1T4	1T4	6AR	
V4	Det.-AVC-AF Amp.	1U5	1U5	6BW	
V5	Audio Output	3V4	3V4	6BX	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: General Electric PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	■40	150	RCE-138	AFH4-33		DO86				
B	▬40	150		PRS25/100		BRH251A				
C	▲200	25								
D	100	25								
C2	10	500		1469-00001		5R5Q1		MCB215	MS-41	Note 1
C3	47		RCW-1073	SI47N750	TCN-47		N750K-100	NT-5447	5TCU-Q47	
C4	.02	200	UCC-041	P288-02	DF-203	PJ2S2		PT412	2TM-S2	
C5	.05	200	UCC-045	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C6A	220		RCW-3015	SI220	D6-221	5W5T25	GP2K-221	UC-5322	5GA-T22	Note 2
B	.002			BPD-002	DD-202	TM5D2	801-002	DC-522	5HK-D2	
C	.005			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
D	220			SI220	D6-221	5W5T25	GP2K-221	UC-5322	5GA-T22	
E	.005			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C7	.003	600	UCC-037	P688-003	D6-302	PTE6D3	GP2-333-302	PT623	6TM-D3	
C8	.05	200	UCC-045	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C9	.03	600	UCC-042	P688-03		PTE6S3		PT613	6TM-S3	
C10	.05	600	UCC-045	P688-05		PTE6S5		PT615	6TM-S5	

Note 1. Not used in all Models.
Note 2. Late Production Models have C6A as separate unit (Part #UCU-036).

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: General Electric PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	500KΩ	½	RRC-185	Q13-133	AG-50-Z	BSK-60-S	U-48	Volume
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Not Req.	Attach to R1A
C	Switch		Not Req.	76-2	SWB-2	Not Req.	US-27	Attach to R1A

RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: General Electric PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R2	91KΩ	½			Note
R3	5600Ω	½	URD-067	BTS-5600	
R4	3.3Meg	½	URD-133	BTS-3.3Meg	
R5	2.2Meg	½	URD-129	BTS-2.2Meg	
R6	4.7Meg	½	URD-137	BTS-4.7Meg	
R7	3.3Meg	½	URD-133	BTS-3.3Meg	
R8	470KΩ	½	URD-113	BTS-470K	

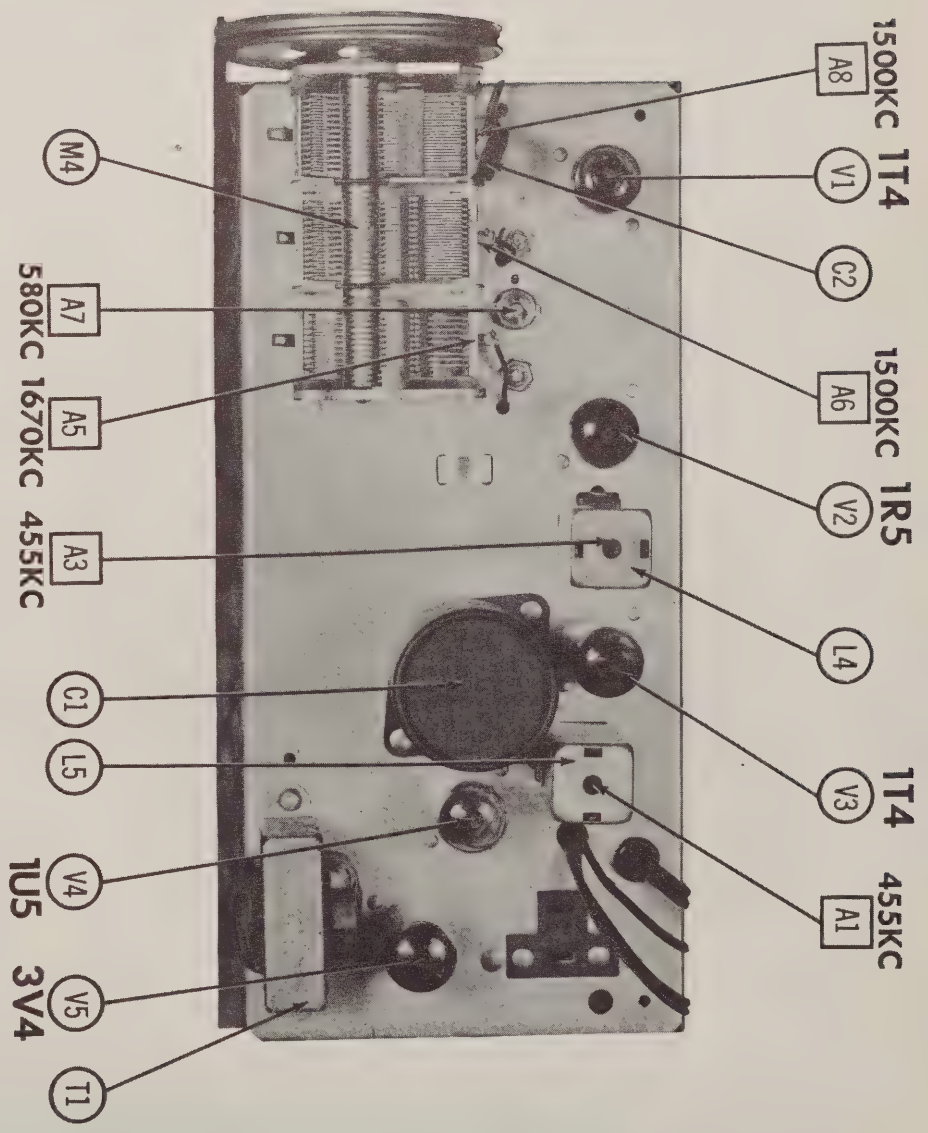
Note: Some Models use a 100KΩ resistor in this application.

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: General Electric PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R9	2.2Meg	½	URD-129	BTS-2.2Meg	
R10	470Ω	½	URD-041	BTS-470	
R11	680Ω	½	URD-045	BTS-680	
R12	1500Ω	½	URD-053	BTS-1500	
R13	33Ω	1	URE-013		
R14	2300Ω	10	RRW-027	1 3/4A-2250	
R15	2700Ω	1	URE-059	BTA-2700	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: General Electric PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T1	9.6KΩ	3.2Ω	470Ω	.32Ω	RTO-118	A-3879	A-2900	RO-16	S-11X ①	① Drill one new mounting hole.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	General Electric PART No.	VIKING PART No.	QUAM PART No.	
SP1	4 x 6"	PM	3.2Ω	ROP-024	46J6	46A07	

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	General Electric PART No.	MILLER PART No.	
L1	Loop Ant.	1.9Ω		RLL-049		
L2	RF Coil	90Ω	5.3Ω	RLB-030		
L3	Osc. Coil	2.9Ω	6.8Ω	RLC-120		
L4	Input IF	20Ω	20Ω	RTL-052	12-C1	
L5	Output IF	18Ω	18Ω	RTL-079	12-C2	

SELENIUM RECTIFIER

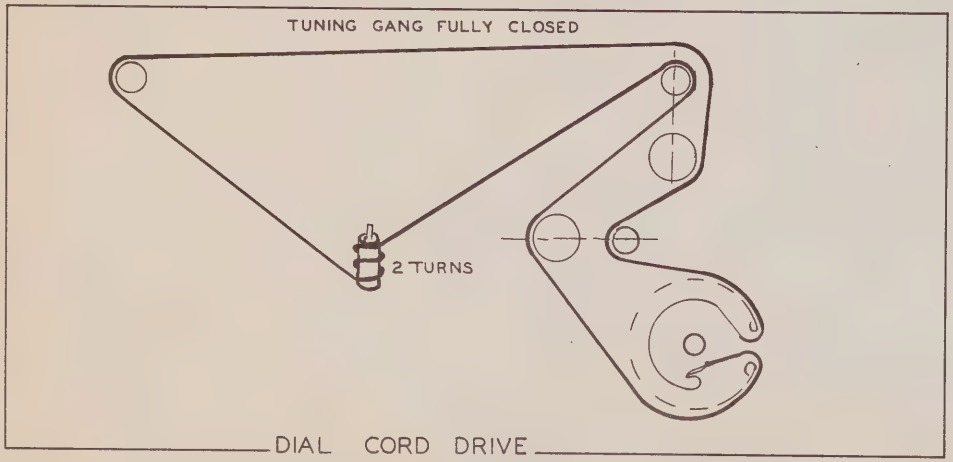
ITEM No.	RATING	REPLACEMENT DATA					
	CURRENT	General Electric PART No.	SYLVANIA PART No.	SELETRON PART No.	FEDERAL PART No.	MALLORY PART No.	SARKES TARZIAN PART No.
M1	.065	RER-001	NB5	5M4	1082	6S75	75

BATTERIES

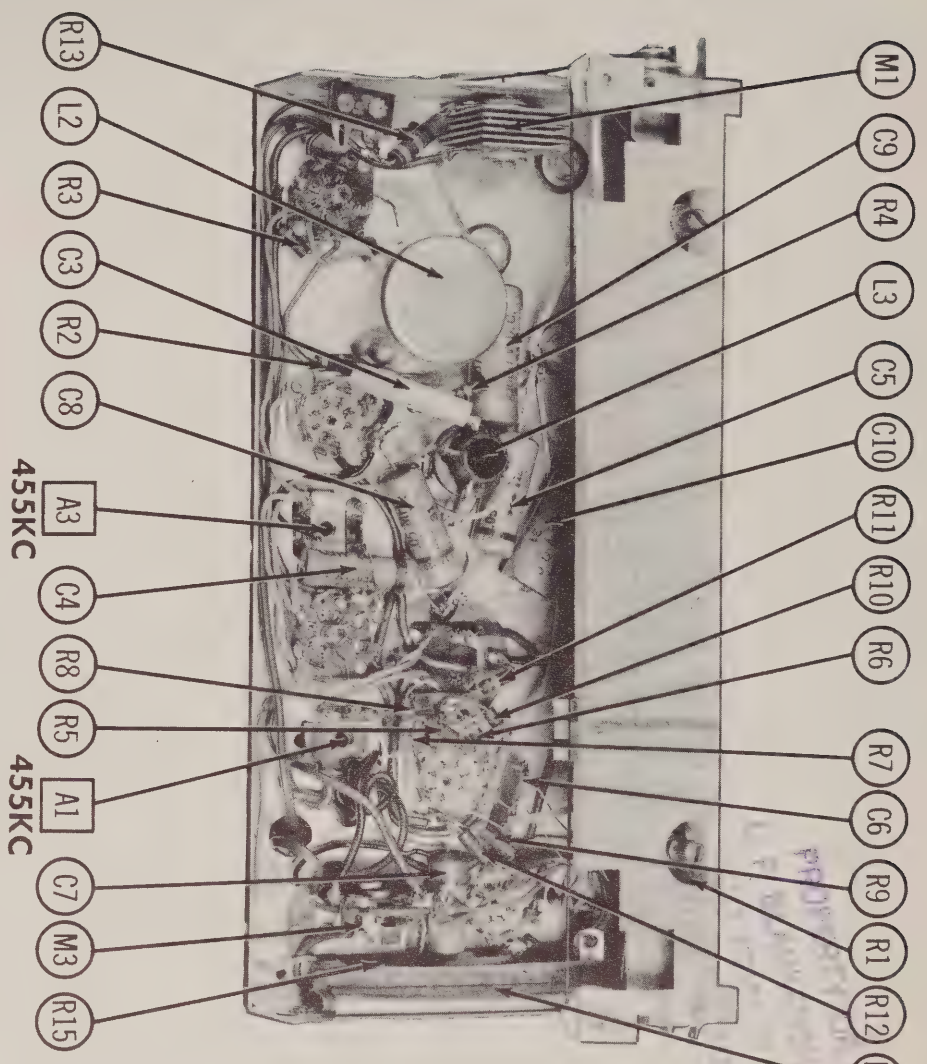
ITEM No.	VOLTAGE	General Electric PART No.	REPLACEMENT DATA						INSTALLATION NOTES
			EVEREADY			BURGESS			
			"A"	"B"	"A-B"	"A"	"B"	"A-B"	
M2	9V. & 90V.				753			F6A60	

MISCELLANEOUS

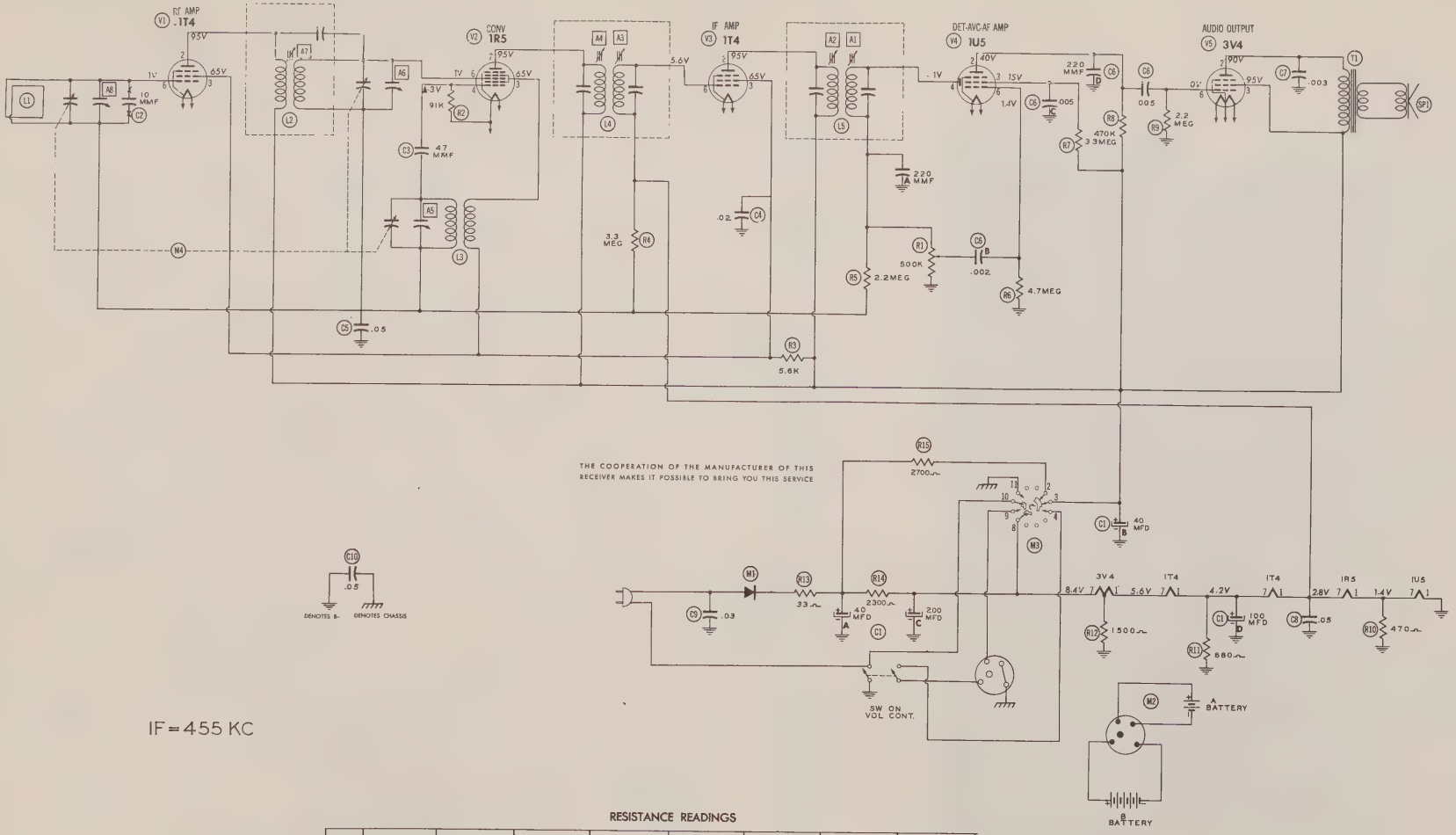
ITEM No.	PART NAME	General Electric PART No.	NOTES
M3	Switch	RSW-088	Power Change-over
M4	Tuning Capacitor	RCT-060	78-490MMF, 78-490MMF, 79-238MMF
	Knob	RDK-277	Off/On Volume or Tuning (Ivory Model 614)
	Knob	RDK-278	Off/On Volume or Tuning (Green Model 615)
	Cabinet Back	RAB-182	Model 614 (Maroon)
	Cabinet Back	RAB-183	Model 615 (Green)
	Cabinet Front	RAC-113	Model 614 (Maroon)
	Cabinet Front	RAC-114	Model 615 (Green)
	Cover	RAC-105	Dial Cover (Maroon Plastic Model 614)
	Cover	RAC-106	Dial Cover (Green Plastic Model 615)



CHASSIS—BOTTOM VIEW



GENERAL ELECTRIC MODELS 614, 615



IF = 455 KC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	1T4	*	†2.7KΩ	†8.3KΩ	†2.7KΩ	*	1.8Meg	*
V 2	1R5	*	†2.7KΩ	†8.3KΩ	91KΩ	*	1.8Meg	*
V 3	1T4	*	†2.7KΩ	†8.3KΩ	INF	*	50Ω	*
V 4	1U5	0Ω	†470KΩ	†3.3Meg	500KΩ	1.8Meg	4.7Meg	*
V 5	3V4	*	†3.2KΩ	†2.7KΩ	†2.7KΩ	*	2.2Meg	*

ALL MEASUREMENTS TAKEN WITH POWER CHANGE-OVER SWITCH IN AC-DC POSITION
† MEASURED FROM OUTPUT OF M1
* DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE
▲ TAKEN WITH VACUUM TUBE VOLTMETER

A PHOTOFACT STANDARD NOTATION SCHEMATIC
©Howard W. Sams & Co., Inc. 1953

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

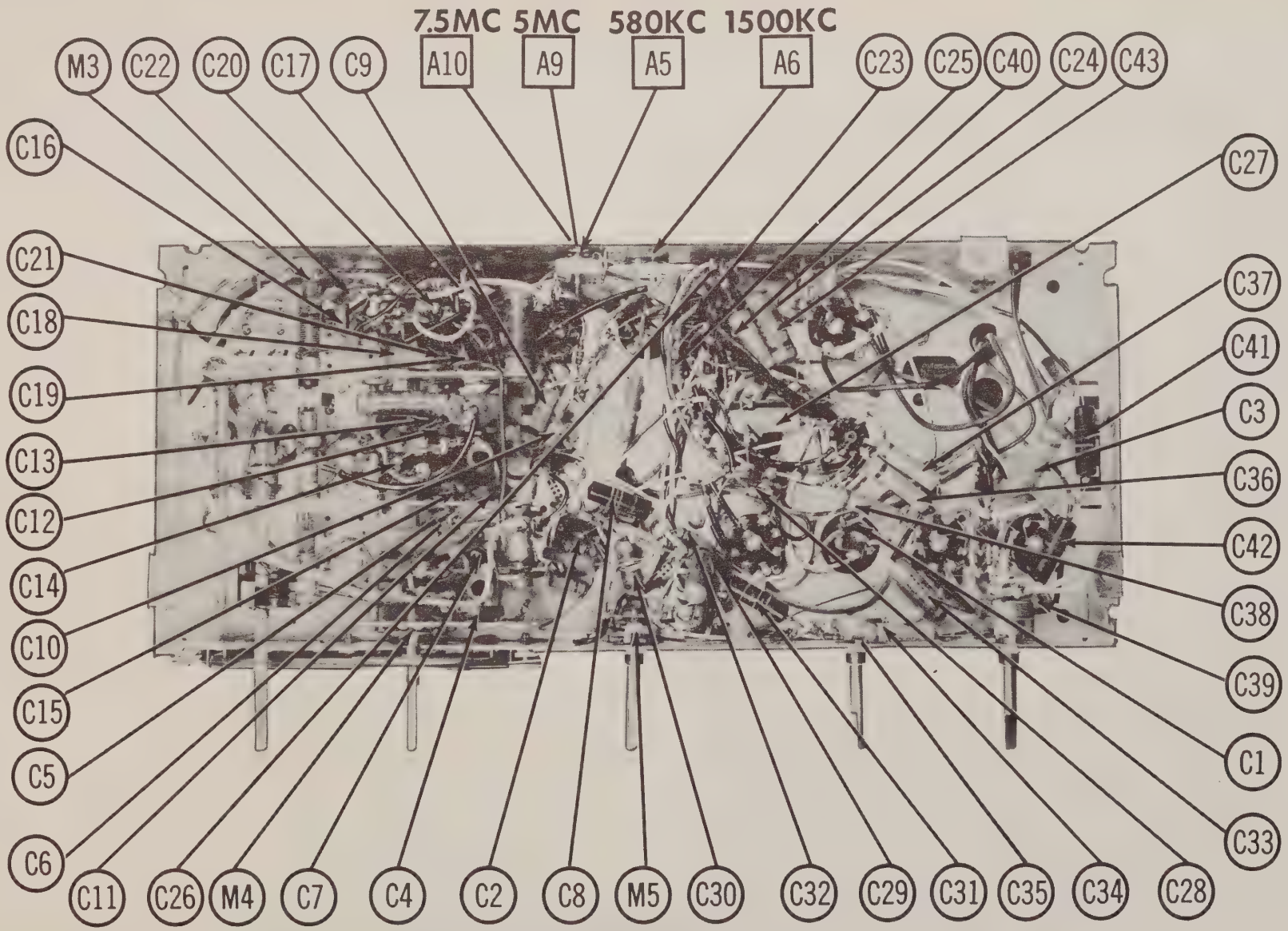
PHILCO
MODEL 53-960

PHILCO
MODEL 53-960

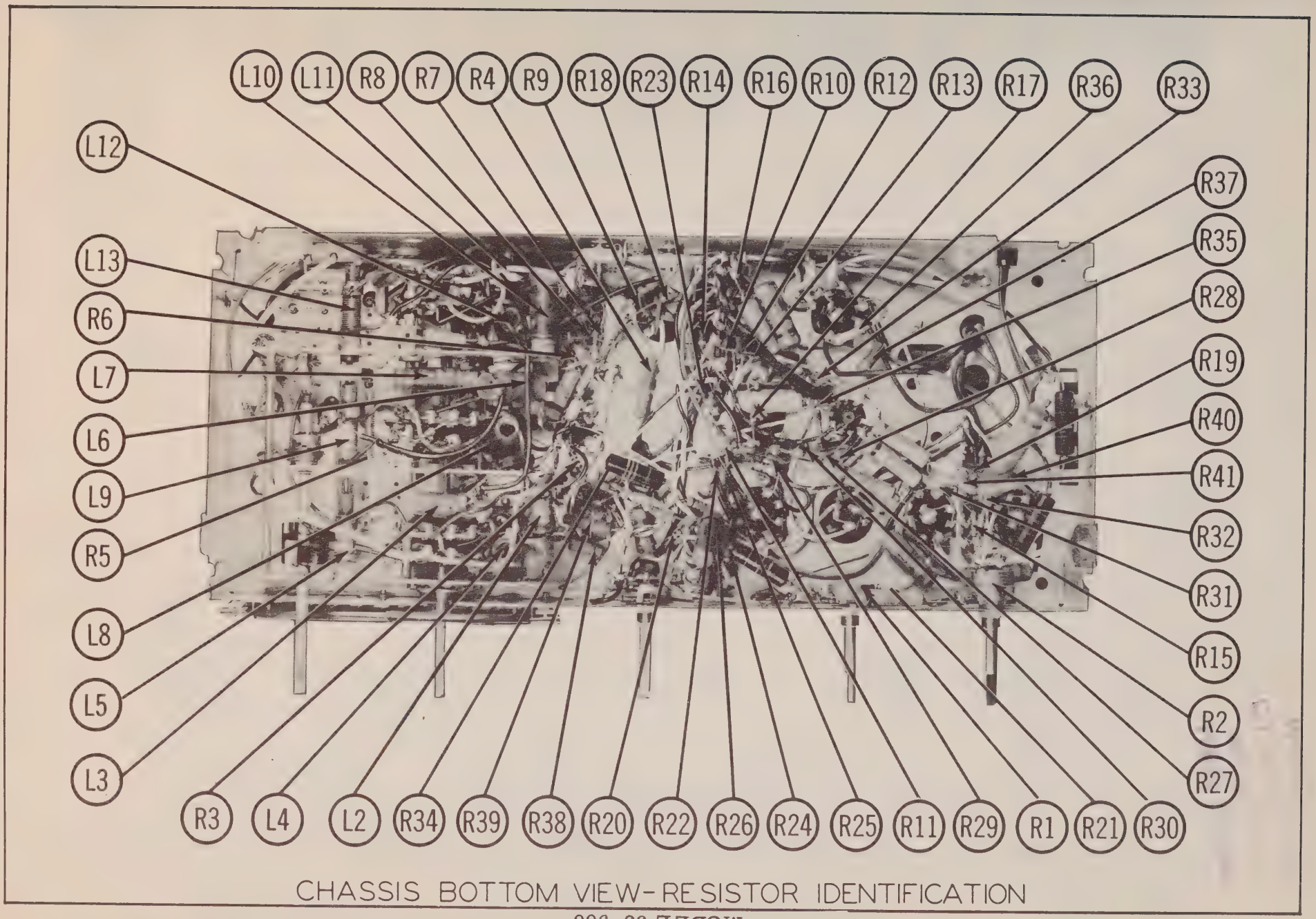
TRADE NAME	Philco Model 53-960
MANUFACTURER	Philco Corp., Tioga & "C" Sts., Philadelphia, Pa.
TYPE SET	AC Operated Multi-band AM Superheterodyne Receiver
TUBES (Eight)	Types 6BA6 RF Amp., 7S7 Conv., 7E7 IF Amp.-RF AVC, 7B6 Det.-AF Amp.-IF AVC, 12AU7 Phase Inv.-Phono Pre-Amp., (2) 7B5 Audio Output, 5AZ4 Rectifier
POWER SUPPLY	110-120 Volts AC — RATING .68 Amp. @ 117 Volts AC
TUNING RANGE- BROADCAST	540-1700KC — SHORT WAVE 1.7-5.3MC, 7.5-22.0MC, BS1 (5.2-7.6MC) BS4 (14.8-15.6MC) BS2 (9.4-9.9MC) BS5 (17.3-18.2MC) BS3 (11.4-12.0MC) BS6 (20.8-21.9MC)

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

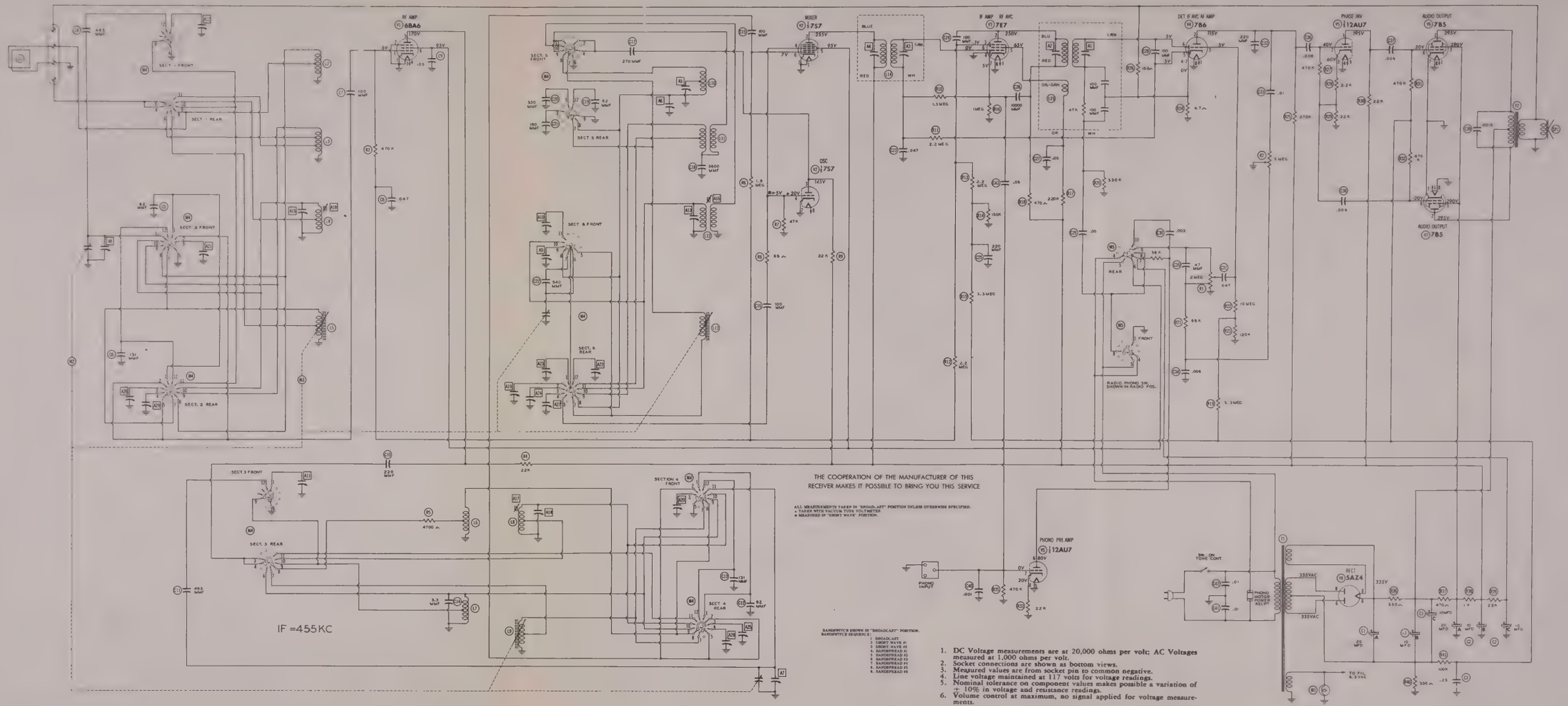
"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America



CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION



THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

ALL MEASUREMENTS TAKEN IN "BROADCAST" POSITION UNLESS OTHERWISE SPECIFIED.
* TAKEN WITH VACUUM TUBE VOLTMETER
# MEASURED IN "SHORT WAVE" POSITION.

BANDSWITCH SHOWN IN "BROADCAST" POSITION.
BANDSWITCH SEQUENCE:
1. BROADCAST
2. SHORT WAVE #1
3. SHORT WAVE #2
4. BANDSPREAD #1
5. BANDSPREAD #2
6. BANDSPREAD #3
7. BANDSPREAD #4
8. BANDSPREAD #5
9. BANDSPREAD #6

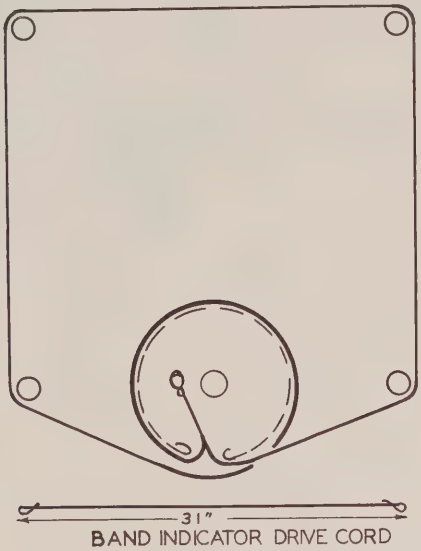
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1953

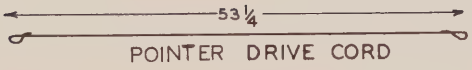
RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BA6	5 Meg	0Ω	0Ω	.1Ω	†23KΩ	†23KΩ	0Ω		
V 2	7S7	0Ω	†1.8KΩ	†23KΩ	47KΩ	†23KΩ	6.3Meg	0Ω	.1Ω	
V 3	7E7	.1Ω	†2.3KΩ	2.3Meg	0Ω	†220KΩ	1.5Meg	1KΩ	0Ω	
V 4	7B6	.1Ω	†270KΩ	10 Meg	4.7Ω	3.7Meg	380KΩ	4.7Ω	0Ω	
V 5	12AU7	†23KΩ	490KΩ	24KΩ	0Ω	0Ω	†580KΩ	470KΩ	22KΩ	.1Ω
V 6	7B5	.1Ω	†610Ω	†800Ω	560KΩ	†270KΩ	560KΩ	0Ω	0Ω	
V 7	7B5	.1Ω	†620Ω	†800Ω	INF	INF	560KΩ	0Ω	0Ω	
V 8	5AZ4	INF	200KΩ	INF	420Ω	0Ω	415Ω	†330Ω	200KΩ	

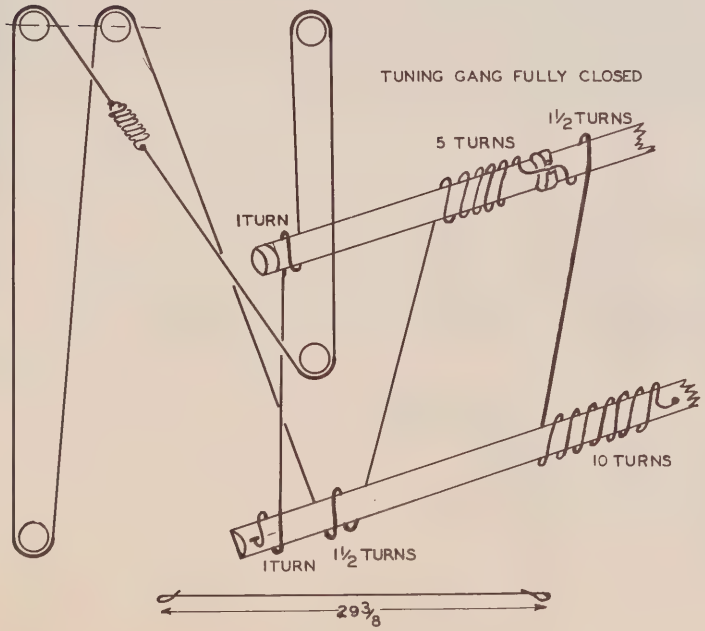
ALL MEASUREMENTS TAKEN IN "BROADCAST" POSITION UNLESS OTHERWISE SPECIFIED
† MEASURED FROM PIN 2 OF V8



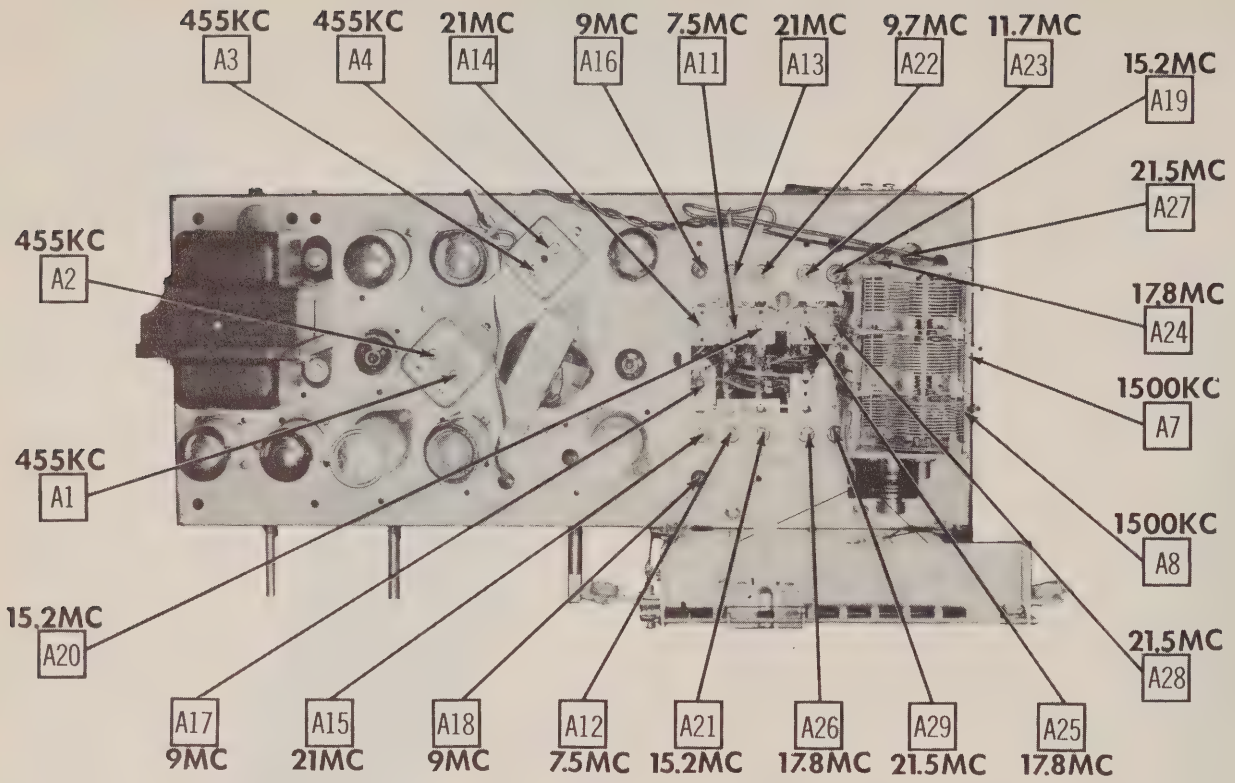
BAND INDICATOR DRIVE CORD



POINTER DRIVE CORD



CONDENSER DRIVE CORD



CHASSIS—TOP VIEW

ALIGNMENT INSTRUCTIONS

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to center stator of tuning gang. Low side to chassis.	455KC (400%Mod)	BC	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. Repeat adjustments.
2.	25MMF	High side to external antenna terminal. Low side to chassis.	580KC	"	580KC	"	A5	Adjust for maximum output. while rocking tuning gang.
3.	"	"	1500KC	"	1500KC	"	A6, A7, A8	Adjust for maximum output in order given.
4.	"	"	5.0MC	SW1	5.0MC	"	A9	Adjust for maximum output.
5.	"	"	7.5MC	BS1	7.5MC	"	A10, A11 A12	Adjust for maximum output in order given.
6.	Preset	A13, A14, and A15	approximately 1/2 turn from tight position.					
7.	25MMF	High side to external antenna terminal. Low side to chassis.	9.0MC	SW2	9.0MC	Across voice coil	A16, A17 A18	Adjust for maximum output in order given.
8.	"	"	21.0MC	"	21.0MC	"	A13, A14 A15	Adjust for maximum output in order given. Repeat steps 7 and 8.
9.	"	"	15.2MC	BS4	15.2MC	"	A19, A20 A21	Adjust for maximum output in order given.
10.	"	"	9.7MC	BS2	9.7MC	"	A22	Adjust for maximum output.
11.	"	"	11.7MC	BS3	11.7MC	"	A23	"
12.	"	"	17.8MC	BS5	17.8MC	"	A24, A25, A26	Adjust for maximum output in order given.
13.	"	"	21.5MC	BS6	21.5MC	"	A27, A28, A29	"

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

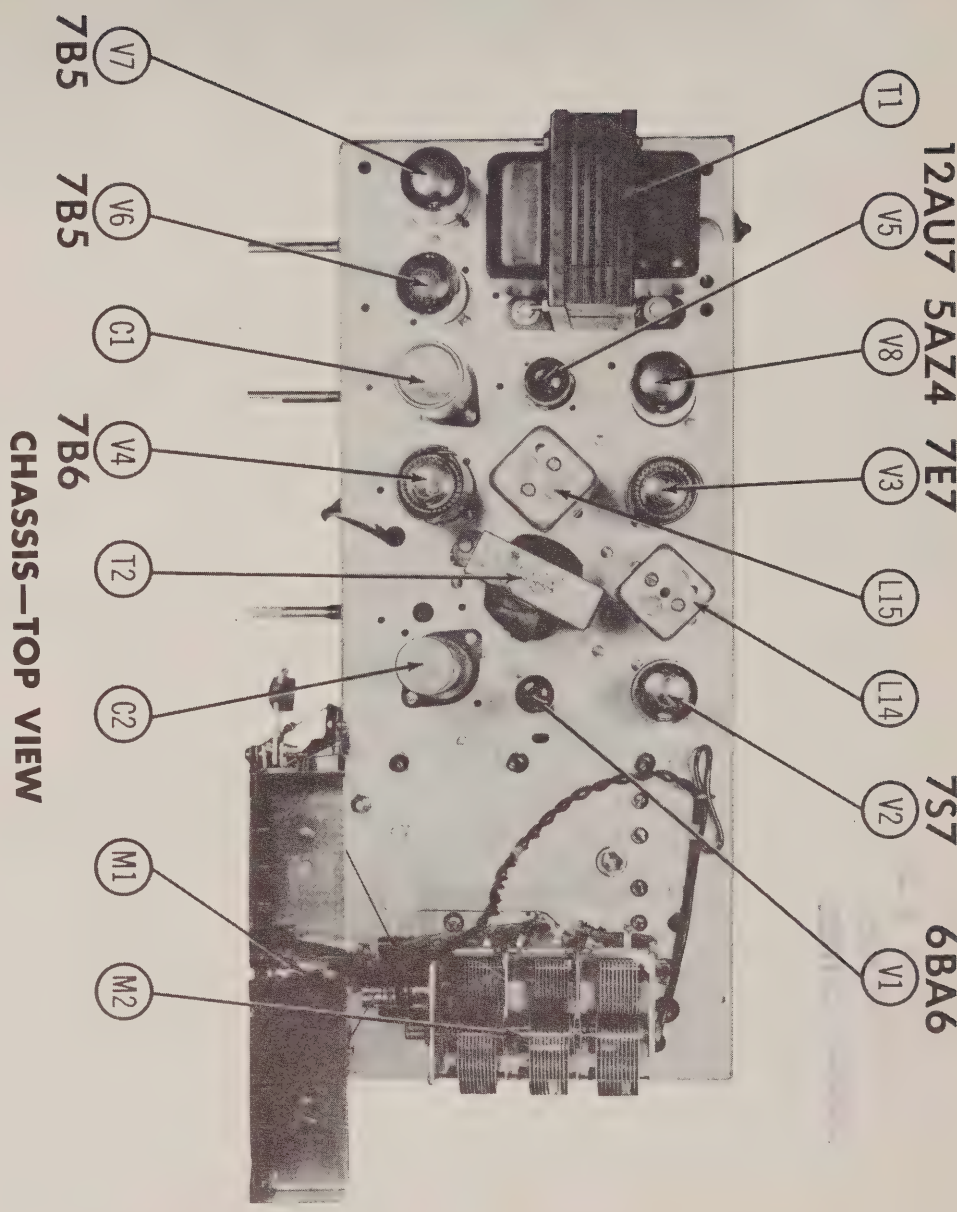
ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	NOTES
		PHILCO PART No.	STANDARD REPLACEMENT		
V1	RF Amplifier	6BA6	6BA6	7BK	
V2	Converter	7S7	7S7	8BL	
V3	IF Amplifier-RF AVC	7E7	7E7	8AE	
V4	Det.-AF Amplifier IF AVC	7B6	7B6	8W	
V5	Phase Inverter Phono Pre-amp.	12AU7	12AU7	9A	
V6	Audio Output	7B5	7B5	6AE	
V7	Audio Output	7B5	7B5	6AE	
V8	Rectifier	5AZ4	5AZ4	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	PHILCO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	■20	450	30-2570-15	AFH3-35		CO26		FP376.3	TVL-3776	
B	▲10	450							TVA-1705	
C	10	450								
C2A	■20	450	30-2570-15	AFH3-35		CO26		FP376.3	TVL-3776	
B	▲10	450							TVA-1705	
C	10	450								
C3	.25	200	30-4588	P488-25		PTE4P25		PT4025	4TM-P25	
C4	485	500	30-1220-23							
C5	62	500	30-1220-62							
C6	131	500	30-1220-38							
C7	100		62-110009001	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C8	.047	200	45-3505-28	P288-047	DF-503	PTE4S47		PT4147	2TM-S47	
C9	.05	400	30-4638	P488-05	DF-503	PTE4S5		PT415	4TM-S5	
C10	220		62-122001001	SI220	D6-221	5W5T25	GP2K-221	UC-5322	5GA-T22	
C11	485	500	30-1220-23							
C12	62	500	30-1220-62							
C13	131	500	30-1220-38							
C14	3.3		30-1221	SI3.3NP0	TCZ-3.3		NP0K-3R3	ZT-5533	5TCCB-V33	
C15	100		62-110009001	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C16	100	500	60-10105417	1468-0001	D6-101	5W5T1	GP1K-101	MC235	1FM-31	
C17	270	500	60-10275417	1469-0003		5R5T3			MS-33	
C18	3600	500	60-20365314							
C19	82	500	60-00825237							
C20	330	500	60-10335317							
C21	180	500	30-1220-30							
C22	540	500	30-1220-61							
C23	.047	200	45-3505-28	P288-047	DF-503	PTE4S47		PT4147	2TM-S47	
C24	100		62-110009001	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C25	220		62-122001001	SI220	D6-221	5W5T25	GP2K-221	UC-5322	5GA-T22	
C26	10000		30-1238-6	BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C27	.05	400	30-4638	P488-05	DF-503	PTE4S5		PT415	4TM-S5	
C28	100		62-110009001	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C29	.05	200	30-4519	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C30	.003	600	30-4639	P688-003	D6-302	PTE6D3	GP2-333-302	PT623	6TM-D3	
C31	.047	200	45-3505-28	P288-047	DF-503	PTE4S47		PT4147	2TM-S47	
C32	220		62-122001001	SI220	D6-221	5W5T25	GP2K-221	UC-5322	5GA-T22	
C33	.01	400	30-4572	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C34	.006	400	30-4591	P688-006		PTE6D6	GP2-333-602	PT626	6TM-D6	
C35	47			SI47	D6-470	TM5Q5	GP1K-470	UC-5447	5GA-Q47	Note 1
C36	.006	400	30-4591	P688-006		PTE6D6	GP2-333-006	PT626	6TM-D6	
C37	.006	400	30-4591	P688-006		PTE6D6	GP2-333-006	PT626	6TM-D6	
C38	.006	400	30-4591	P688-006		PTE6D6	GP2-333-006	PT626	6TM-D6	
C39	.0015	1000	30-4616	P1088-0015		PTE16D15			MB-D15	
C40	.001	600	30-4620	P688-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	
C41	.01	1000	45-3505-92	P1088-01		PJ16S1		PT1611	MB-S1	
C42	.01	1000	45-3505-92	P1088-01		PJ16S1		PT1611	MB-S1	
C43	.05	200	30-4519	P288-05	DF-503	PJ2S5		PT415	2TM-S5	Note 1

Note 1. Not used in all Models.



CHASSIS—TOP VIEW

PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	PHILCO PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	2 Meg	½	33-5535-34	Q18-139X	AT-116	BT-82	UT-451	Volume-Tap ⓐ 1 Meg
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R1A
R2A	5 Meg	½	33-5566-38		AG-85-S		U-67	Tone-Note
B	Shaft		Not Req		FS-3		Not Req.	Attach to R2A
C	Switch		Not Req.		SWB		US-26	Attach to R2A

Note . This control measures 5 Meg before opening up to infinite resistance.

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	PHILCO PART No.	IRC PART No.	
R3	470KΩ	½	66-4478340	BTS-470K	
R4	22KΩ	2	66-3225340	BTB-22K	
R5	4700Ω	½	66-2478340	BTS-4700	
R6	1.8Meg	½	66-5188340	BTS-1.8Meg	
R7	47KΩ	½	66-3478340	BTS-47K	
R8	68Ω	½	66-0688350		
R9	22KΩ	1	66-3224340	BTA-22K	
R10	1.5Meg	½	66-5158340	BTS-1.5Meg	
R11	2.2Meg	½	66-5228340	BTS-2.2Meg	
R12	2.2Meg	½	66-5228340	BTS-2.2Meg	
R13	2.2Meg	½	66-5228340	BTS-2.2Meg	
R14	150KΩ	½	66-4158340	BTS-150K	
R15	3.3Meg	½	66-5338340	BTS-3.3Meg	
R16	1000Ω	½	66-2108340	BTS-1000	
R17	220KΩ	½	66-4228340	BTS-220K	
R18	470Ω	½	66-1478340	BTS-470	
R19	3.3Meg	½	66-5338340	BTS-3.3Meg	
R20	330KΩ	½	66-4338340	BTS-330K	
R21	68KΩ	½	66-3688540	BTS-68K	
R22	10 Meg	½	66-6108340	BTS-10 Meg	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	PHILCO PART No.	IRC PART No.	
R23	120KΩ	½	66-4128340	BTS-120K	
R24	4.7Ω	½	66-9478340		
R25	270KΩ	½	66-4728340	BTS-270K	
R26	150Ω	½	66-1158350	BTS-150	
R27	470KΩ	½	66-4478340	BTS-470K	
R28	2200Ω	½	66-2228340	BTS-2200	
R29	22KΩ	½	66-3228340	BTS-22K	
R30	22KΩ	½	66-3228340	BTS-22K	
R31	470KΩ	½	66-4478340	BTS-470K	
R32	470KΩ	½	66-4478340	BTS-470K	
R33	22KΩ	½	66-3228340	BTS-22K	
R34	56KΩ	½	66-3565340	BTS-56K	
R35	470KΩ	½	66-4478340	BTS-470K	
R36	330Ω	3	33-1334-8		
R37	470Ω	1	66-1474540	BTA-470	
R38	1000Ω	1	66-2104540	BTA-1000	
R39	22KΩ	2	66-3224540	BTB-22K	
R40	330Ω	3	33-1334-8		
R41	100KΩ	½	66-4108340	BTS-100K	

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA				
	PRI.	SEC. 1	SEC. 2	SEC. 3	PHILCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T1	117VAC ⓐ .68A	670VCT .085ADC	5VAC ⓐ 2A	6.3VAC ⓐ 2.4A	32-8584	P-5059 ①	P-3152 ①	PV-120A	R-14A ①

① Drill new mounting holes.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		PHILCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T2	9.4KΩ	3.14Ω	670Ω	.48Ω	32-8585	A-3830	A-2936 ①	RO-110 ①	S-55X	①Drill one new mtg. hole.

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	PHILCO PART No.	VIKING PART No.	QUAM PART No.	
SP1	10 "	PM	3.14Ω	36-1610-17	10J11	10A31	

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	PHILCO PART No.	MILLER PART No.	
L1	Loop Ant.	0Ω		76-7493		
L2	BC Ant.Coil	1.8Ω		32-4033-15		Note① tapped ⓐ 1.4Ω
L3	SW Ant.Coil	.9Ω		32-4364		Note② tapped ⓐ .7Ω and .8Ω
L4	SW Ant.Coil	.1Ω CT		32-4208		Note③
L5	SW Ant.Coil	0Ω		32-3670		Note④ tapped
L6	BC RF Coil	4.6Ω		32-4369		Standard Broadcast band-tapped ⓐ 3.4Ω
L7	SW RF Coil	.9Ω		32-4364-1		SW 1 Band & 49 meter band-tapped ⓐ 7Ω
L8	SW RF Coil	0Ω		32-4208-7		SW 2 Band - tapped
L9	SW RF Coil	0Ω		32-3671		31M, 25M, 19M, 16M and 13Meter Bands, tapped
L10	BC Osc.Coil	6.5Ω		32-4370-2		Standard Broadcast Band -tapped ⓐ 5.6Ω
L11	SW Osc. Coil	.2Ω	.6Ω	32-4207-2		SW 1Band & 49 Meter band - Sec.tapped ⑤ .4Ω
L12	SW Osc.Coil	0Ω	0Ω	32-4208-2		SW 2 band
L13	SW Osc.Coil	0Ω		32-4212-2		31M, 25M, 19M, 16M and 13 Meter Bands
L14	Input IF	28Ω	30Ω	32-3976	512-C1	
L15	Output IF	10.5Ω	10.5Ω	32-4346-1		Includes RF Choke & 47KΩ Diode RF Filter Resistor

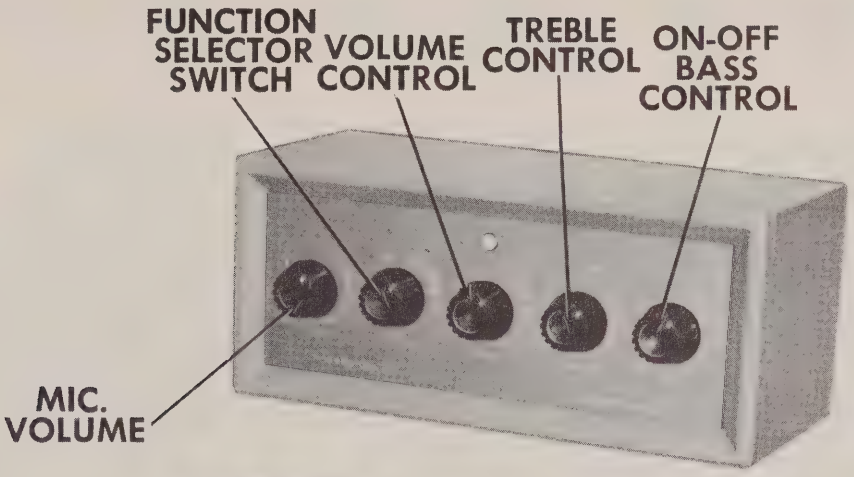
① Standard Broadcast Band (.55-1.70MC)
② SW 1 Band (1.7-5.3MC) & 49 Meter Band (5.2-7.6MC)
③ SW 2 Band (7.5-22MC)
④ 31 Meter Band (9.4-9.9MC)
25 Meter Band (11.4-12MC)
19 Meter Band (14.8-15.6MC)
16 Meter Band (17.3-18.2MC)
13 Meter Band (20.8-21.9MC)

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					PHILCO PART No.		
M1	Bayonet	6-3	.25	Blue	34-2064		Type #44

MISCELLANEOUS

ITEM No.	PART NAME	PHILCO PART No.	NOTES
M2	Tuning Capacitor	31-2741-2	18-478MMF, 18-478MMF, 8-423MMF
M3	Tuning Core Assy.	76-5958	
M4	Switch	42-1883-2	Band Selector
M5	Switch	42-1971	Function Selector
	Trimmer Capacitor Assy.	31-6507-5	Antenna: SW2, 7.5MC, 15.2MC, 17.8MC, 21.5MC (5 Units)
	Trimmer Capacitor Assy.	31-6507-4	RF: SW2, 7.5MC, 15.2MC, 17.8MC, 21.5MC Oscillator: SW2, 9.7MC, 11.7MC, 15.2MC (9 Units)
	Trimmer Capacitor Assy.	31-6477-4	Osc. Padder (BC), Osc. Trimmer (SW1), Osc.Trimmer(7.5MC) (3 Units)
	Trimmer Capacitor Assy.	31-6476-19	Oscillator: 17.8MC, 21.5MC (2 Units)
	Trimmer Capacitor Assy.	31-6308	Oscillator: BC
	Cabinet	10898	Includes baffle assy. #40-8774
	Back	76-7502-1	
	Dial Plate Assy.	76-7333	
	Dial Scale Assy.	76-4437	
	Pointer	56-6495FCP	
	Knob	54-4774-11	Function Selector
	Knob	54-4774-12	Band Selector
	Knob	54-4774-13	Off/On Tone
	Knob	54-4774-14	Volume
	Knob	54-4774	Tuning



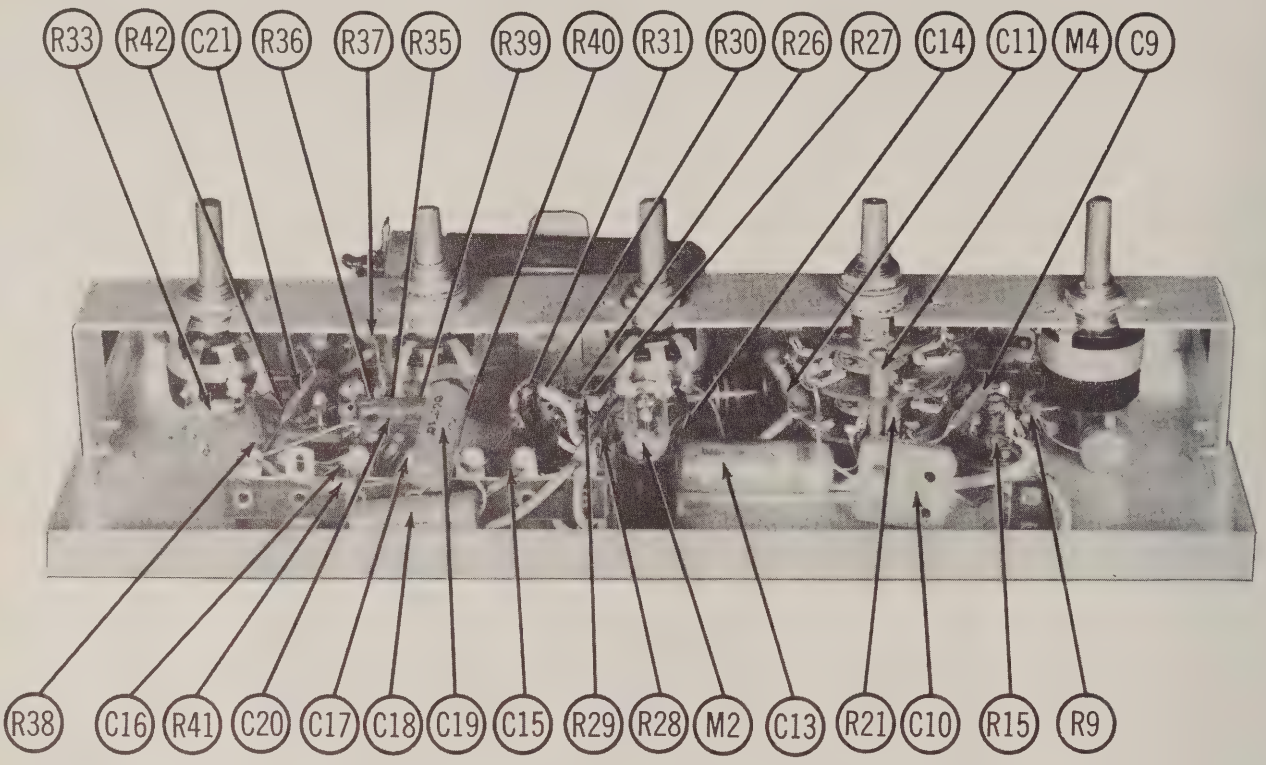
PILOT MODELS
AA-901, PA-911

PILOT MODELS
AA-901, PA-911

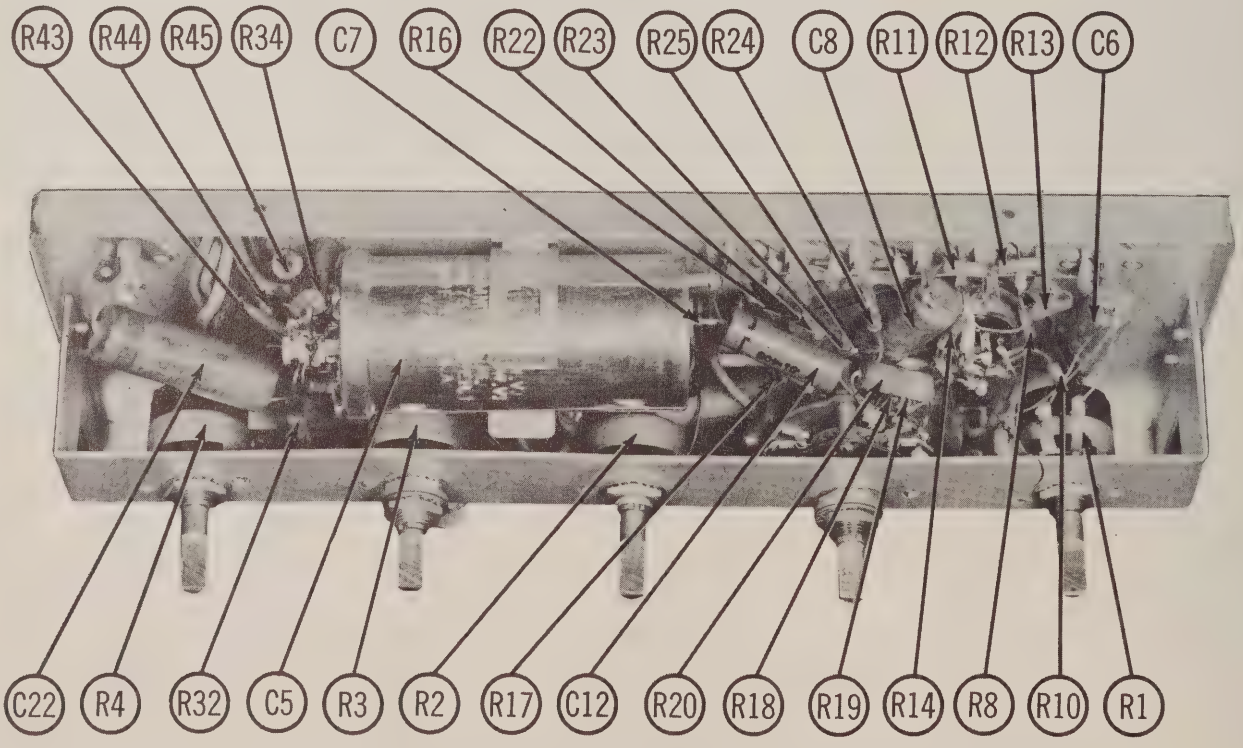
TRADE NAME	Pilot Models AA-901 (Pwr. Amp. & Pwr. Supply), PA911 (Pre. Amp.)
MANUFACTURER	Pilot Radio Corp., 37-06 36th. St., Long Island City, N.Y.
TYPE SET	AC Operated 7 Channel Pre. Amp. & Audio Amplifier
TUBES (Eight)	Types 12AX7 Mic, Pre. Amp.-Phono Pre. Amp., 12AX7 AF Amp., 12AT7 AF Amp.-Cath. Follower, 6SN7GT AF Amp.-Phase Inv., 6SN7GT Driver, (2) KT66 Audio Output, 5U4G Rectifier
POWER SUPPLY	110-120 Volts AC RATING 1.46 Amp. @ 117 Volts AC

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

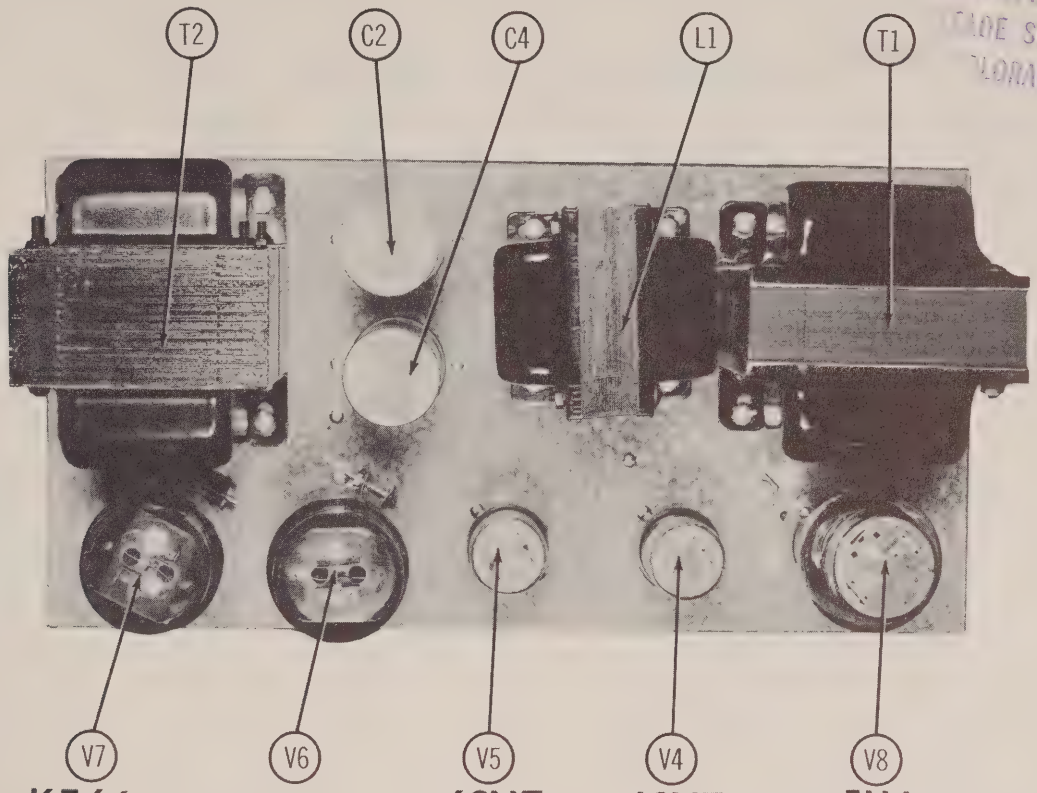


MODEL PA-911-TOP VIEW

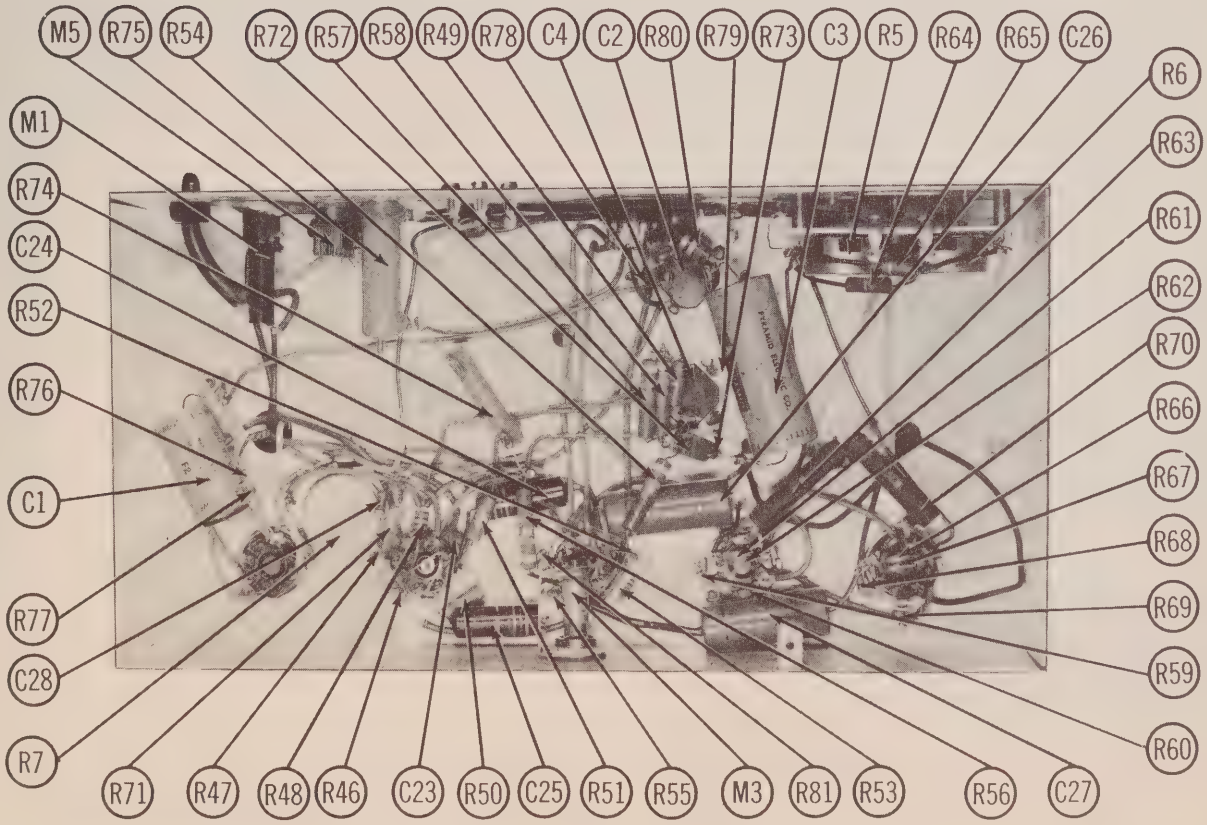


MODEL PA-911-BOTTOM VIEW

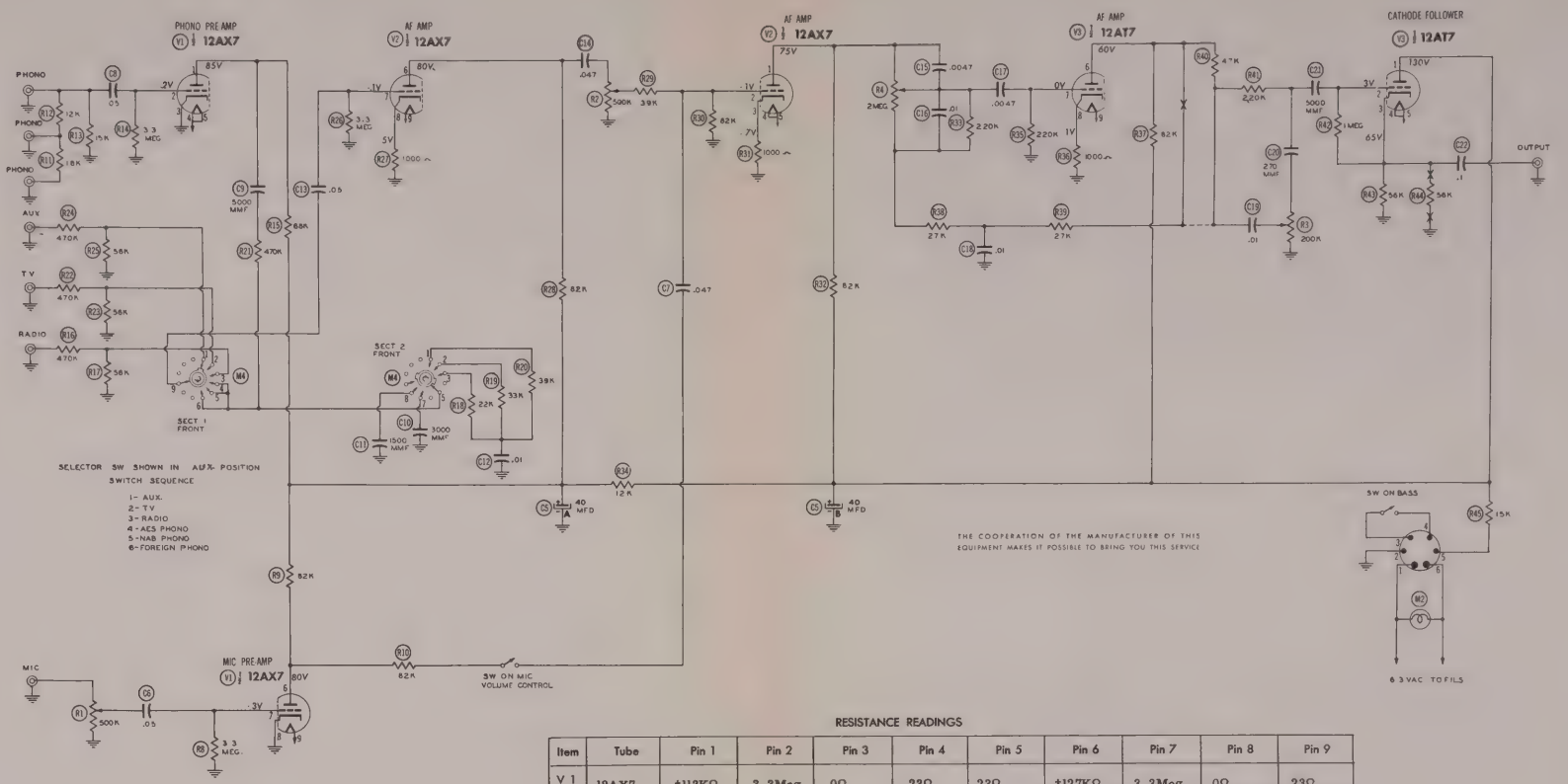
...Y OF
...ANKENSHIP
...ADE ST.
...LORADO



MODEL AA-901-TOP VIEW



MODEL AA-901-BOTTOM VIEW



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	12AX7	†113KΩ	3.3Meg	0Ω	23Ω	23Ω	†127KΩ	3.3Meg	0Ω	23Ω
V 2	12AX7	†111KΩ	27KΩ	1KΩ	23Ω	23Ω	†127KΩ	3.3Meg	1KΩ	23Ω
V 3	12AT7	†33KΩ	1 Meg	28KΩ	23Ω	23Ω	†111KΩ	220KΩ	1KΩ	23Ω

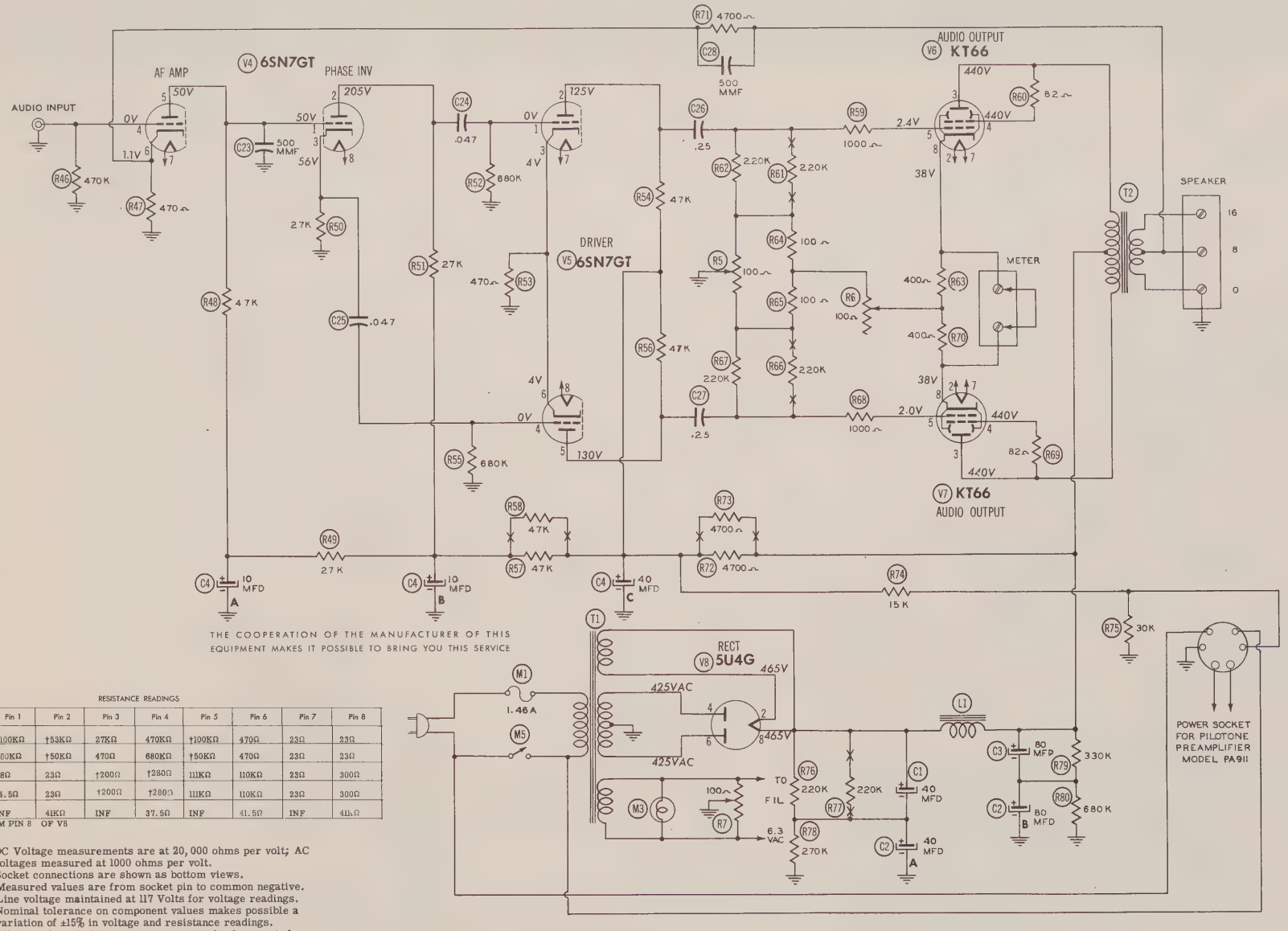
† MEASURED FROM PIN 8 OF V8

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 Volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at iminimum, proper output load connected.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1953

199-8

SCHEMATIC - MODEL PA-911



THE COOPERATION OF THE MANUFACTURER OF THIS EQUIPMENT MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 4	6SN7GT	†100KΩ	†53KΩ	27KΩ	470KΩ	†100KΩ	470Ω	23Ω	23Ω
V 5	6SN7GT	680KΩ	†50KΩ	470Ω	680KΩ	†50KΩ	470Ω	23Ω	23Ω
V 6	KT66	58Ω	23Ω	†200Ω	†280Ω	111KΩ	110KΩ	23Ω	300Ω
V 7	KT66	14.5Ω	23Ω	†200Ω	†280Ω	111KΩ	110KΩ	23Ω	300Ω
V 8	5U4G	INF	41KΩ	INF	37.5Ω	INF	41.5Ω	INF	41kΩ

† MEASURED FROM PIN 8 OF V8

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 Volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

© Howard W. Sams & Co., Inc. 1953

199-8

SCHEMATIC-MODEL-AA-901

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: PILOT PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	NOTES
V1	Mic Pre-Amp.				
	Phono Pre-Amp.	12AX7	12AX7	9A	
V2	AF Amplifier	12AX7	12AX7	9A	
V3	AF Amplifier Cathode Follower	12AT7	12AT7	9A	
V4	AF Amplifier Phase Inverter	6SN7GT	6SN7GT	8BD	
V5	Driver	6SN7GT	6SN7GT	8BD	
V6	Audio Output	KT66	KT66	7S	
V7	Audio Output	KT66	KT66	7S	
V8	Rectifier	5U4G	5U4G	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: PILOT PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1	40	250	24-40	PRS250/40		BR4025A		TC58	TVA-1511	
C2A	▲40	475	24-107	AFH2-73		BO48		FP266	TVL-2850	
B	▬80	475		PRS500/16						
C3	80	250	24-118	PRS450/80		BR8045		2N531	TVA-1716	
C4A	■10	475	24-117	AFH3-50		CO40		FP396.2	TVL-4840	
B	▲10	475								
C	▬40	475								
C5A	▬40	350	24-119	AFH2-57		BO45		FP238	TVL-2764	
B	▲40	350								
C6	.05	200		P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C7	.047	400		P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C8	.05	200		P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C9	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C10	3000	500		1464-003		1R5D3		MCB461	MS-23	
C11	1500			SII500	D6-152	TM5D15	GP2L-152	UC-5215	5HK-D15	
C12	.01	400		P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C13	.05	200		P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C14	.047	400		P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C15	.0047	400		P688-0047	D6-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	
C16	.01	400		P488-01	D3-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C17	.0047	400		P688-0047	D6-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	
C18	.01	400		P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C19	.01	400		P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C20	270	500		1468-0003	D6-271	5W5T3	GP2K-271		1FM-33	
C21	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C22	.1	200		P288-1	DF-104	PJ2P1		PT401	2TM-P1	
C23	500			SI500	D6-501	TM5T5	GP2K-501	UC-535	5GA-T5	
C24	.047	600		P688-047	DF-503	PTE6S47		PT6147	6TM-S47	
C25	.047	600		P688-047	DF-503	PTE6S47		PT6147	6TM-S47	
C26	.25	600		684-25		PTE6P25		PT6025	6TM-P25	
C27	.25	600		684-25		PTE6P25		PT6025	6TM-P25	
C28	500			SI500	D6-501	TM5T5	GP2K-501	UC-535	5GA-T5	

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: PILOT PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	500KΩ	½	36-41	Q13-133	AG-60-Z	B-60-S	U-48	Mike Volume
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R1A
C	Switch		Not Req.	76-1	SWB	Not Req.	US-26	Attach to R1A
R2A	500KΩ	½	36-42	Q13-133	AG-60-Z	B-60	U-48	Volume
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R2A
R3	200KΩ	½	37-25					Treble
R4	2 Meg	½	37-24			B-77-S		Bass & Switch
R5A	100Ω	2	39-31	W-100	A43-100		R100L	Tube Balance
B	Shaft		Not Req.	Not Req.	FKS-1/4		Not Req.	Attach to R5A
R6A	100Ω	2	39-31	W-100	A43-100		R100L	Bias
B	Shaft		Not Req.	Not Req.	FKS-1/4		Not Req.	Attach to R6A
R7A	100Ω	2	39-31	W-100	A43-100		C100P	Hum Balance
B	Shaft		Not Req.	Not Req.	FKS-1/4		Not Req.	Attach to R7A

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: PILOT PART No.	IRC PART No.	NOTES
R8	3.3Meg	½		BTS-3.3Meg	
R9	82KΩ	½		BTS-82K	
R10	82KΩ	½		BTS-82K	
R11	18KΩ	½		BTS-18K	Note 1
R12	12KΩ	½		BTS-12K	
R13	15KΩ	½		BTS-15K	
R14	3.3Meg	½		BTS-3.3Meg	
R15	68KΩ	½		BTS-68K	
R16	470KΩ	½		BTS-470K	
R17	56KΩ	½		BTS-56K	
R18	22KΩ-5%	½		BTS-22K-5%	
R19	33KΩ-5%	½		BTS-33K-5%	
R20	39KΩ-5%	1		BTA-39K-5%	
R21	470KΩ	½		BTS-470K	
R22	470KΩ	½		BTS-470K	
R23	56KΩ	½		BTS-56K	
R24	470KΩ	½		BTS-470K	
R25	56KΩ	½		BTS-56K	
R26	3.3Meg	½		BTS-3.3Meg	
R27	1000Ω	½		BTS-1000	
R28	82KΩ	½		BTS-82K	
R29	39KΩ	½		BTS-39K	
R30	82KΩ	½		BTS-82K	
R31	1000Ω	½		BTS-1000	
R32	82KΩ	½		BTS-82K	
R33	220KΩ	½		BTS-220K	
R34	12KΩ	2		BTB-12K	
R35	220KΩ	½		BTS-220K	
R36	1000Ω	½		BTS-1000	
R37	82KΩ	½		BTS-82K	
R38	27KΩ	½		BTS-27K	
R39	27KΩ	½		BTS-27K	
R40	47KΩ	½		BTS-47K	
R41	220KΩ	½		BTS-220K	
R42	1 Meg	½		BTS-1 Meg	
R43	56KΩ	1		BTS-56K	Note 2
R44	56KΩ	1		BTS-56K	Note 2
R45	15KΩ	2		BTB-15K	
R46	470KΩ	½		BTS-470K	
R47	470Ω	½		BTS-470	
R48	47KΩ	1		BTA-47K	
R49	27KΩ	1		BTA-27K	
R50	27KΩ-5%	1			Note 3
R51	27KΩ-5%	1			Note 3
R52	680KΩ	½		BTS-680K	
R53	470Ω	½		BTS-470	Note 4
R54	47KΩ	2			Note 3
R55	680KΩ	½		BTS-680K	
R56	47KΩ	2			Note 3
R57	47KΩ	2		BTB-47K	Note 5
R58	47KΩ	2		BTB-47K	Note 5
R59	1000Ω	½			
R60	82Ω	½			
R61	220KΩ	½		BTS-220K	Note 6
R62	220KΩ	½		BTS-220K	Note 6
R63	400Ω	5		1 3/4A-400	
R64	100Ω	1		BTA-100	
R65	100Ω	1		BTA-100	
R66	220KΩ	½		BTS-220K	Note 7
R67	220KΩ	½		BTS-220K	Note 7
R68	1000Ω	½			
R69	82Ω	½			
R70	400Ω	5		1 3/4A400	
R71	4700Ω	1		BTA-4700	
R72	4700Ω	1		BTA-4700	Note 8
R73	4700Ω	1		BTA-4700	Note 8
R74	15KΩ	10		1 3/4A15K	
R75	30KΩ	20		2D-30K	
R76	220KΩ	½		BTS-220K	Note 9
R77	220KΩ	½		BTS-220K	Note 9
R78	270KΩ	1		BTA-270K	
R79	330KΩ	½		BTS-330K	
R80	680KΩ	2		BTB-680K	
R81	2200Ω	½		BTS-2200	Note 4
R82					

Note 1. Some models use a 22KΩ resistor in this application.
Note 2. Some models replace R43 & R44 with one 27KΩ (1 Watt) resistor.
Note 3. R50 & R51 are matched wto within 1% and R54 & R56 are matched to within 1 %.
Note 4. Some models use a 390Ω resistor in this application.
Note 5. Some models replace R57 & R58 with one 27KΩ (2 Watt) resistor.
Note 6. Some models replace R61 & R62 with one 100KΩ resistor.
Note 7. Some models replace R66 & R67 with one 100KΩ resistor.
Note 8. Some models replace R72 & R73 with one 2200Ω (2 Watt) resistor.
Note 9. Some models replace R76 & R77 with one 100KΩ (1 Watt) resistor.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: PILOT PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T1	117VAC @1.46A	850VCT .160ADC	5VAC @3A	6.3VAC @5.2A	55-32	PC-8412		PV-200 ①	

① Drill new mounting holes.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: PILOT PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T2	8.5KΩ CT	160Ω tap @ 8Ω	250Ω CT	.77Ω tap @ .62Ω	56-35	A-8054			S-38A ①	① Drill new mounting holes.

PARTS LIST AND DESCRIPTIONS (Continued)

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ~)	PILOT PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
L1	.160ADC	77Ω	5 Hy.	57-15	C-1411	C-3196	PCO-150 ①	

① Drill new mounting holes.

FUSES

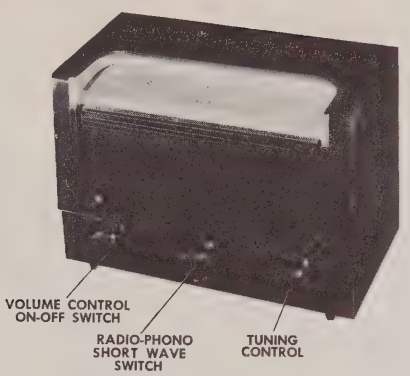
ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			PILOT PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG (Slo-Blo)	2½A. 125V.			31302.5 (3AG-2½A Slo-Blo)	341001	MDL 2½	HKP

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					PILOT PART No.		
M2	Bayonet	6-8	.25	Brown			Type #47 (Model PA911)
M3	Bayonet	7.5	2	White			Type #51 (Model AA901)

MISCELLANEOUS

ITEM No.	PART NAME	PILOT PART No.	NOTES
M4	Switch	100-83A	Function Selector
M5	Switch	101-36	Off/On



PROPERTY OF
L... ...NSHIP

RCA VICTOR MODEL
2-X-261 (Ch. RC-1085B)

TRADE NAME	RCA Victor Model 2-X-621 (Ch. RC-1085B)
MANUFACTURER	RCA Victor Div., Radio Corp. of America, Camden, N.J.
TYPE SET	AC-DC Operated 2 Band AM Superheterodyne Receiver
TUBES (Six)	Types 12BA6 RF Amp., 12BE6 Conv., 12BA6 IF Amp., 12SQ7 Det.-AVC-AF Amp., 35L6GT Audio Output, 35Z5GT Rectifier
POWER SUPPLY	110-120 Volts AC-DC — RATING .26 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1600KC — SHORT WAVE 5.8'-18.0MC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set dial pointer, turn tuning gang fully closed and set pointer to left hand calibration mark on dial back plate.
Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-.
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 1 (grid) of 12BA6 (V3). Low side to B-.	455KC (400~Mod)	BC	Quiet point near 1600KC	Across voice coil	A1, A2	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.	"	High side to pin 7 (grid) of 12BE6 (V2). Low side to B-.	"	"	"	"	A3, A4	Adjust for maximum output when adjusting secondary winding shunt primary with 18KΩ resistor and vice versus.
3.	"	High side to pin 1 (grid) of 12BA6 (V1) Low side to chassis.	"	"	"	"	A5	Adjust for MINIMUM output.
4.		Loop	1620KC	"	Tuning gang fully open	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
5.		"	1400KC	"	Tune for maximum signal	"	A7	"
6.		"	600KC Right hand calibration mark.	"	600KC	"	A8	Adjust for maximum output. while rocking tuning gang. Repeat steps 4, 5 and 6.
7.	47MMF	High side thru 47MMF to center terminal of loop antenna terminal board. Low side to loop antenna primary.	18.2MC	SW	Tuning gang fully open	"	A9	Adjust for maximum output. Two peaks will be noted. Use one having lowest capacity.
8.	"	"	15.2MC	"	Tune for maximum signal	"	A10	Adjust for maximum output. Two peaks will be noted. Use one having higher capacity. Leave tuning gang at this setting (15.2 MC) and tune signal generator to 16.1MC. Image frequency signal should be heard.
9.	"	"	6.1 MC	"	6.1MC	"	A11, A12	Adjust for maximum output while rocking tuning gang. Leave tuning gang at this setting (6.1 MC). Tune signal generator to 7.01MC and weaker signal should be heard.

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: RCA VICTOR PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	INSTALLATION NOTES
V1	RF Amplifier	12BA6	12BA6	7BK	
V2	Converter	12BE6	12BE6	7CH	
V3	IF Amplifier	12BA6	12BA6	7BK	
V4	Det-AVC-AF Amp.	12SQ7	12SQ7	8Q	
V5	Audio Output	35L6GT	35L6GT	7S	
V6	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: RCA VICTOR PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	80	150	72312	PRS150/80-40		BRD8415		3N536	TVA-2460	Green.
B	30	150								Blue.
C2	4700		73473	BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C3	.047	400	73553	P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C4	.047	400	73553	P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C5	56		71924		TCN-56		N750L-360			
C6	.01	400	73561	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C7	56		71924		TCN-56		N750L-560			
C8	3600	500	39665							
C9	620	500	38831							
C10	150		73501	S1150	D6-151	TM5T15	GP2K-151	UC-5315	5GA-T15	
C11	.022	200	73562	P488-022	DF-203	PTE4S22		PT4122	4TM-S22	
C12	150		73501	S1150	D6-151	TM5T15	GP2K-151	UC-5315	5GA-T15	
C13	.22	200	73794	P488-22		PTE4P22		PT4025	2TM-P22	
C14	.0022	600	73595	P688-0022	D6-222	PTE6D22	GP2-333-222	PT6222	6TM-D22	
C15	.015	200	73797	P688-015		PTE6S15		TP400	6TM-S15	
C16	.047	400	73553	P488-047		PTE4S47		PT4147	4TM-S47	
C17	.1	400	73551	P488-1		PTE4P1		PT401	4TM-P1	
C18	150		73501	S1150	D6-151	TM5T15	GP2K-151	UC-5315	5GA-T15	

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: RCA VICTOR PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	500KΩ	½	38410	Q13-133	AG-60-Z	B-60-S	U-48	Volume.
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R1A.
C	Switch		Not Req.	76-1	SWB	Not Req.	US-26	Attach to R1A.

RESISTORS

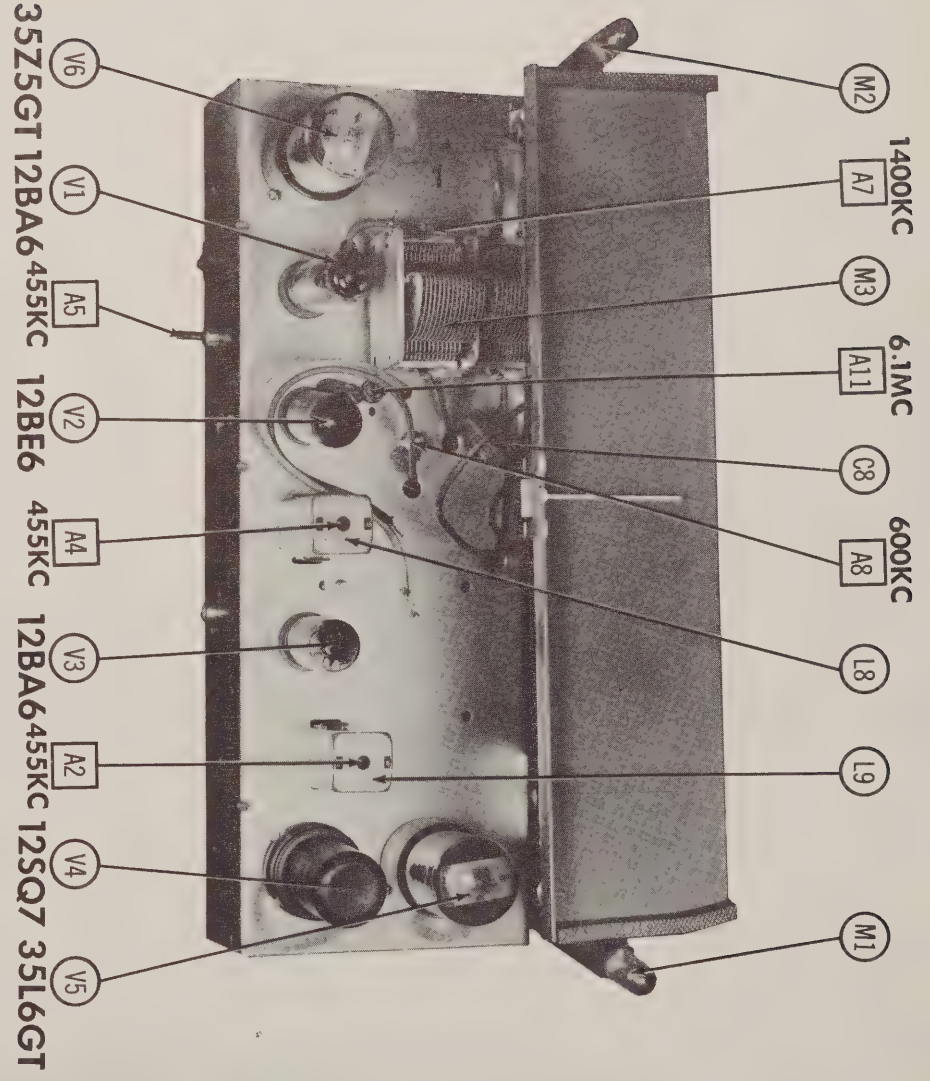
ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: RCA VICTOR PART No.	IRC PART No.	NOTES
R2	82Ω	½	503082	BTS-82	
R3	1000Ω	½	503210	BTS-1000	
R4	1000Ω	½	503210	BTS-1000	
R5	220KΩ	½	503422	BTS-220K	
R6	33KΩ	½	503333	BTS-33K	
R7	560Ω	½	503156	BTS-560	
R8	2.2Meg	½	504522	BTS-2.2Meg	
R9	180Ω	½	503118	BTS-180	
R10	56KΩ	½	503356	BTS-56K	

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: RCA VICTOR PART No.	IRC PART No.	NOTES
R11	4.7Meg	½	504547	BTS-4.7Meg	
R12	220KΩ	½	503422	BTS-220K	
R13	100KΩ	½	503410	BTS-100K	
R14	470KΩ	½	503447	BTS-470K	
R15	120Ω	½	503112	BTS-120	
R16	1200Ω	1	513212	BTA-1200	
R17	270Ω	½	503127	BTS-270	
R18	33Ω	1	514033		
R19	220KΩ	½	503422	BTS-220K	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: RCA VICTOR PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T1	3.3KΩ	3.5Ω	260Ω tap ⓐ 14Ω	.62Ω	73976	A-3336 ①	A-3031 ①	R0-3 ①		① Drill one new mounting hole.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	RCA VICTOR PART No.	JENSEN PART No.	QUAM PART No.	
SP1	4"	PM	3.5Ω	77218	ST-113 Mod. P4-X	4A07	

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	RCA VICTOR PART No.	MILLER PART No.	
L1	Loop Ant.	0Ω	1.4Ω	77217		Includes back cover.
L2	Sw. Ant. Coil	1.6Ω	.1Ω	74927		
L3	Sw. Osc. Coil	.1Ω	.1Ω	74926		Includes core.
L4	BC Osc. Coil	.6Ω	4.2Ω	74925	70-OSC	Includes core.
L5	RF Choke	1.5Ω		74930	4612*	12 Microhenries; wound on 15KΩ resistor.
L6	RF Choke	2Ω		72618	4515■	20 Microhenries; wound 1Meg resistor.
L7	455KC Wave trap	14Ω		74928		Includes core.
L8	Input IF	11.5Ω	11.5Ω	74918	12-C1	
L9	Output IF	14.5Ω	14.5Ω	73037	12-C6	

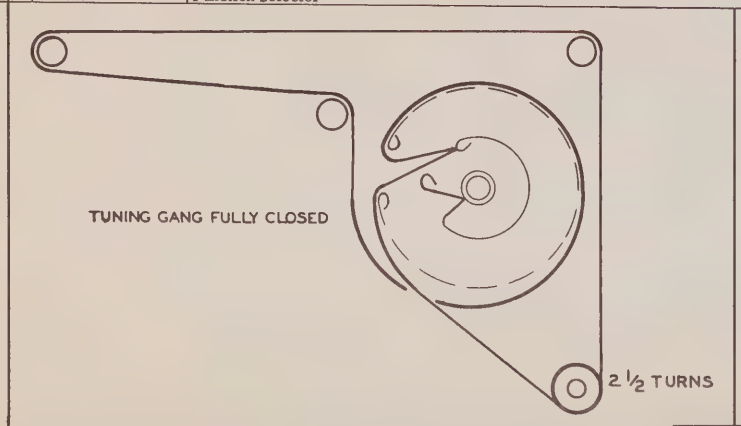
* Parallel with 15KΩ resistor.
■ Parallel with 1Meg resistor.

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					RCA VICTOR PART No.		
M1	Bayonet			White	71116		Type No. 1490.
M2	Bayonet			White	71116		Type No. 1490.

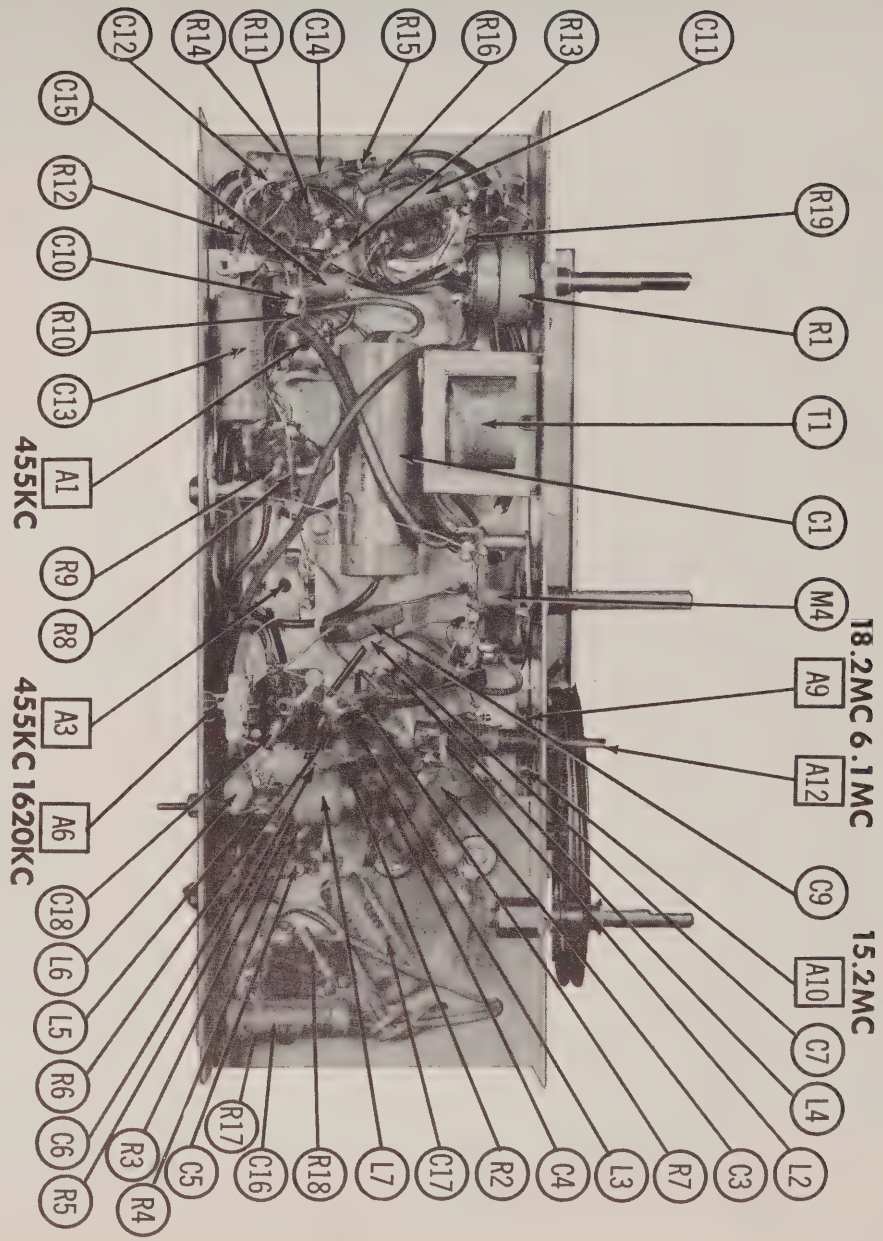
MISCELLANEOUS

ITEM No.	PART NAME	RCA VICTOR PART No.	NOTES
M3	Tuning Capacitor	77216	15-498MMF, 4-465MMF.
M4	Switch	74921	Function Selector
	Trimmer Capacitor Assy.	74924	Shortwave Osc. Shortwave RF; Dual 3-35MMF.
	Trimmer Capacitor	74923	Broadcast Oscillator, 4-70MMF.
	Cabinet	Y2447	Complete with Escutcheon No. 77241.
	Back	77217	Includes Antenna Loop.
	Dial	77220	
	Pointer	77142	
	Knob	74931	Off/On Volume, Tuning (2 Used)
	Knob	77219	Function Selector



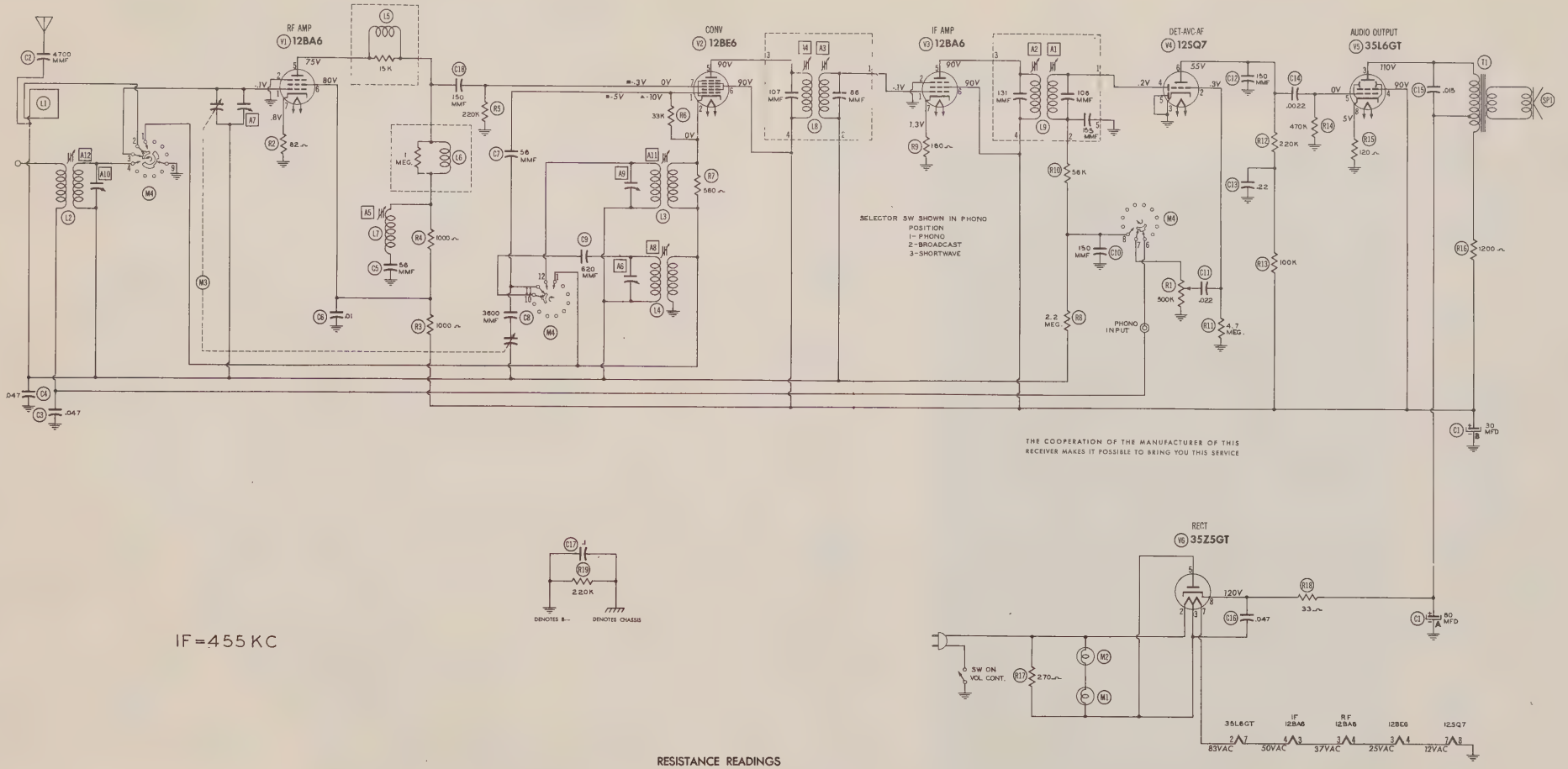
DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



RCA VICTOR
MODEL 2-X-621 (Ch. RC-1085B)

RCA VICTOR
MODEL 2-X-621 (Ch. RC-1085B)



IF=455 KC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12BA6	2.7Meg	0Ω	36Ω	24Ω	† 3.2KΩ	† 2.2KΩ	82Ω	
V 2	12BE6	33KΩ	.7Ω	24Ω	12Ω	† 1.2KΩ	† 1.2KΩ	220KΩ	
V 3	12BA6	2.7Meg	0Ω	36Ω	48Ω	† 1.2KΩ	† 1.2KΩ	180Ω	
V 4	12SQ7	220KΩ	4.7Meg	0Ω	556KΩ	0Ω	† 321KΩ	12Ω	0Ω
V 5	35L6GT	INF	83Ω	† 299Ω	† 1.2KΩ	470KΩ	† 47Ω	48Ω	120Ω
V 6	35Z5GT	INF	118Ω	112Ω	INF	112Ω	† 33Ω	83Ω	1Meg

ALL MEASUREMENTS TAKEN IN "BROADCAST" POSITION UNLESS OTHERWISE SPECIFIED.
■ MEASURED IN "SHORTWAVE" POSITION.
▲ TAKEN WITH VACUUM TUBE VOLTMETER.
† MEASURED FROM PIN 8 OF V6.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

© Howard W. Sams & Co., Inc. 1953

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PROPERTY OF
L. F. [illegible]

IMPORTANT FILING NOTICE

The contents for this envelope will be found among the last folders in this complete set of folders . . . *unless* it has been purchased as part of a *complete* volume of PHOTOFACTS assembled in a DeLuxe Binder.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.

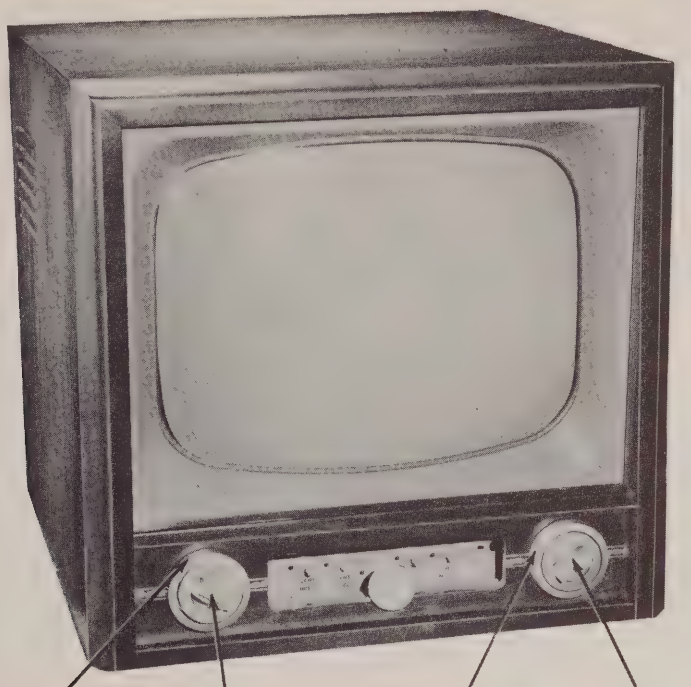
MODEL 1U458

SENTINEL MODELS
1U-458, 1U-459, 1U-460, 1U-461

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

SENTINEL MODELS
1U-458, 1U-459, 1U-460, 1U-461



SENTINEL MODEL 1U-458

TRADE NAME	Sentinel Models 1U-458, 1U-459, 1U-460, 1U-461
MANUFACTURER	Sentinel Radio Corp., 2100 W. Dempster, Evanston, Ill.
TYPE SET	Television Receiver
TUBES	Twenty-six
POWER SUPPLY	110-120 Volts AC-60 Cycles RATING 1.92 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13, Video IF 26.4MC, Sound IF 21.9MC (Intercarrier)

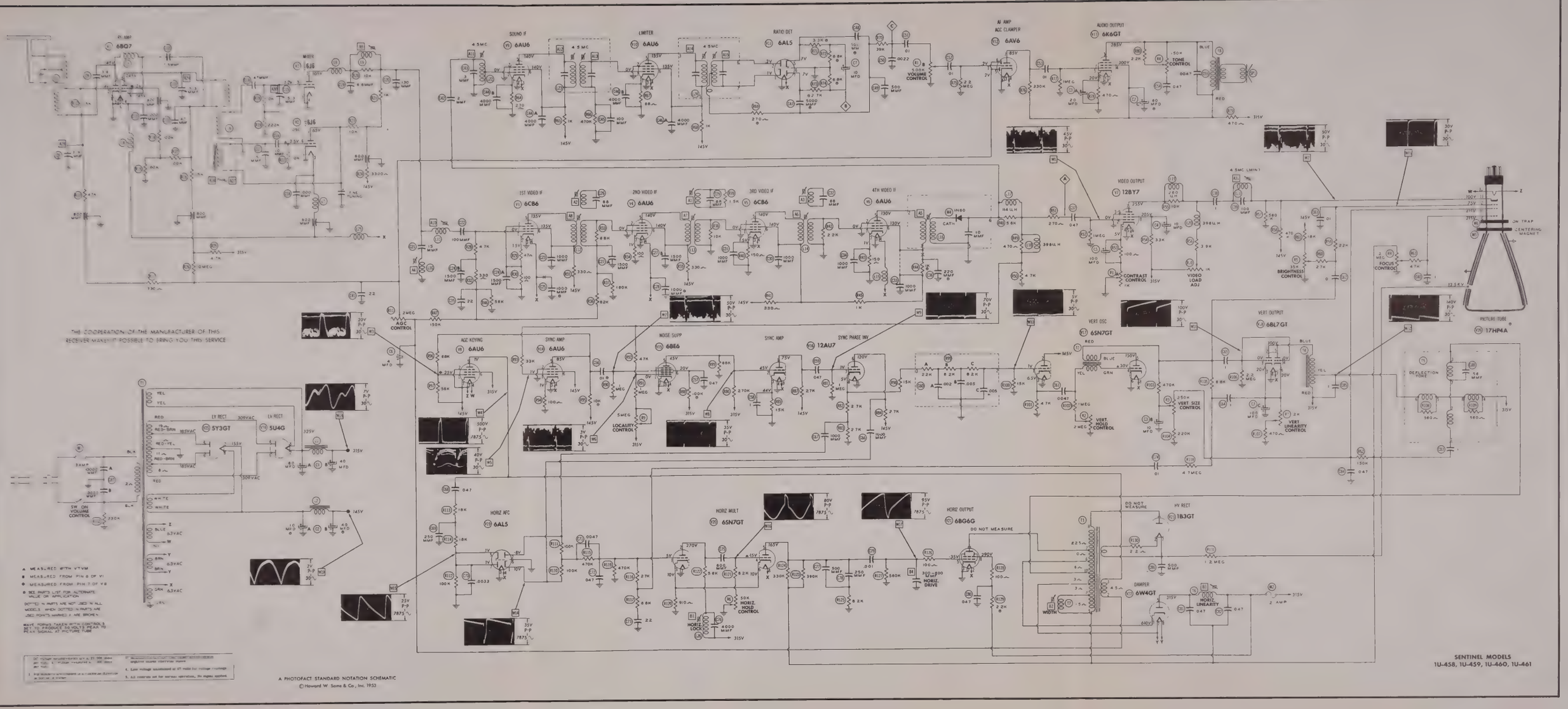
INDEX

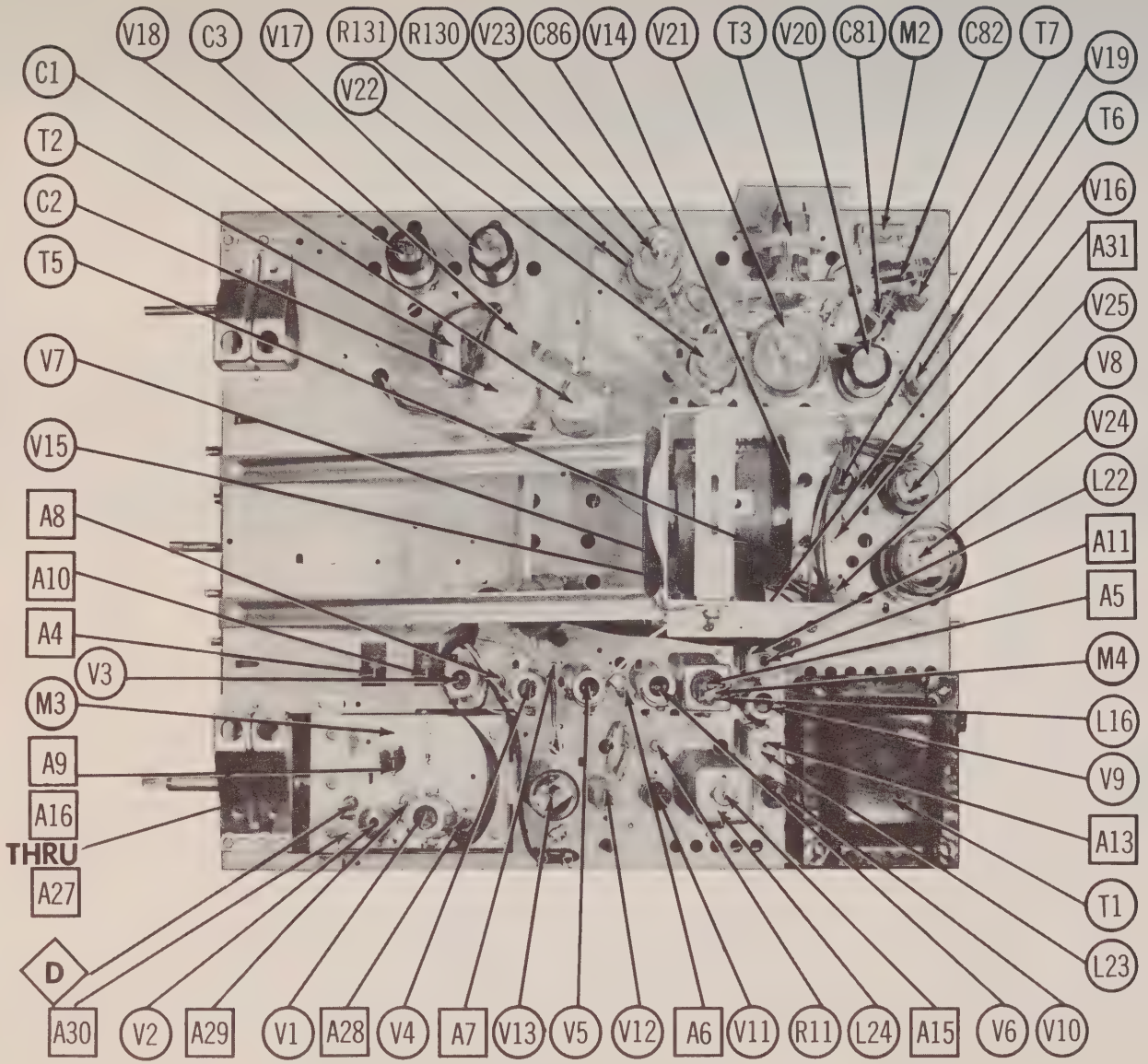
Alignment Instructions 6, 7
Disassembly Instructions 18
Horizontal Sweep Circuit Adjustments 11
Parts List and Descriptions ..... 13 thru 16
Photographs
Cabinet-Rear View 11
Capacitor and Alignment Identification 4, 9
Chassis - top view 3
RF Tuner 10
Photographs (Cont)
Resistor and Inductor Identification 12, 17
Resistance Measurements 8
Schematic 2
Servicing in the Field 18
Tube Failure Check Chart 5
Tube Placement Chart (Bottom View) 8
Tube Placement Chart (Top View) 5

SENTINEL MODELS
1U-458, 1U-459, 1U-460, 1U-461

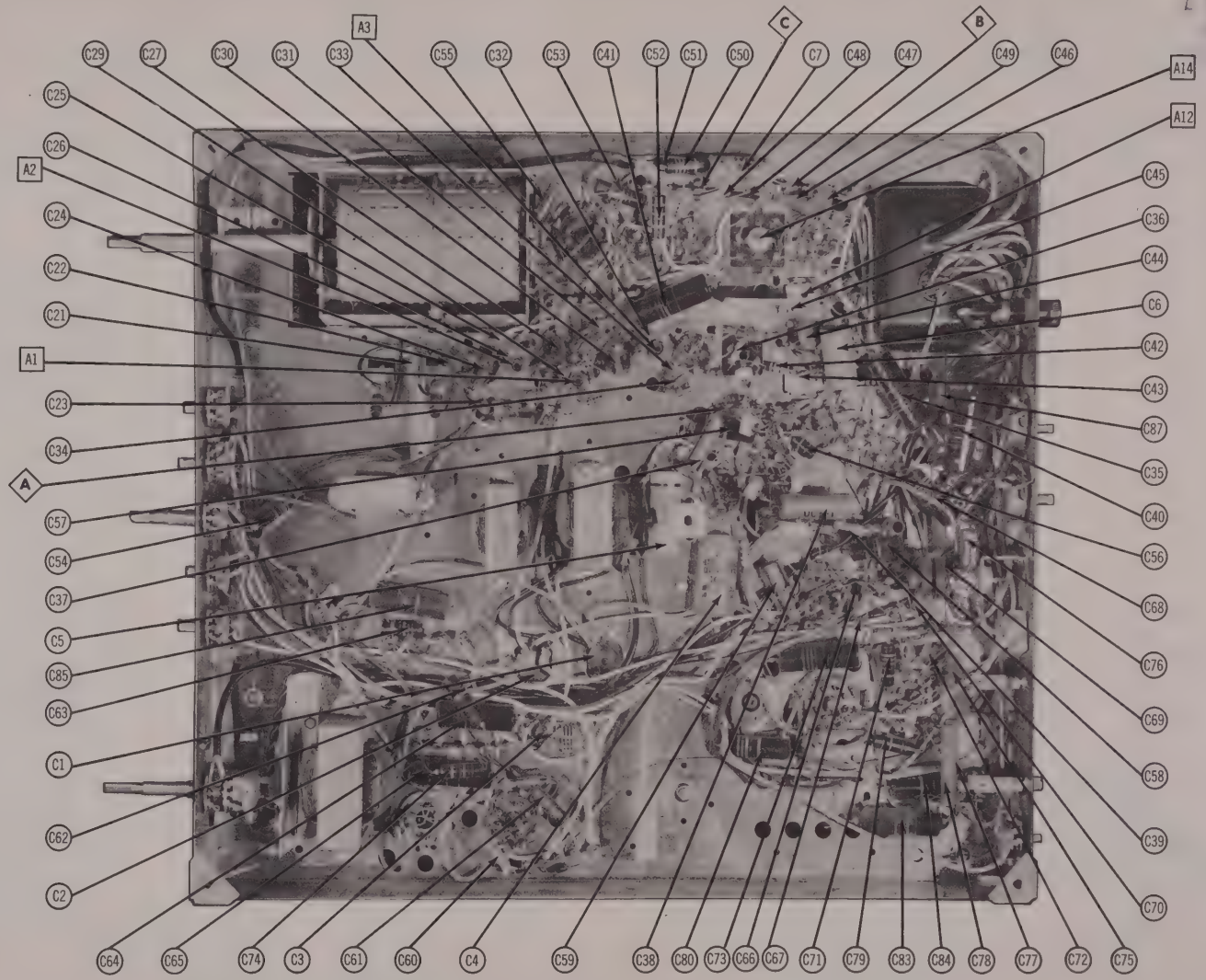
HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America


THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1953
SENTINEL MODELS 1U-458, 1U-459, 1U-460, 1U-461



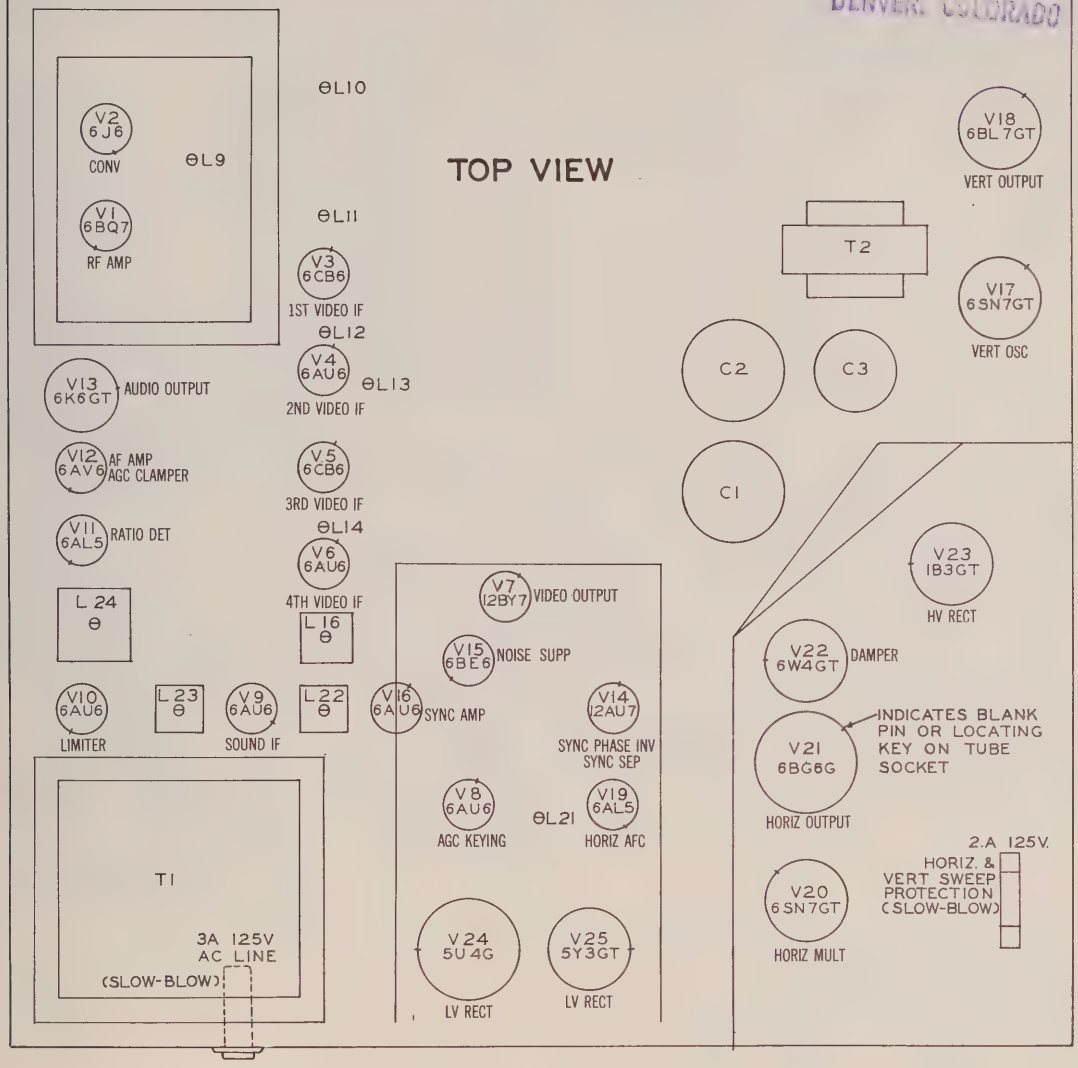
CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

TUBE PLACEMENT CHART

DENVER, COLORADO



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound - V24, Fuse (M1)

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - V2, V3, V4, V5, V6, V25
No pic, no sound, has snow - V1, V2, V3
No pic, has sound, has raster- V7, V26
Has pic, no sound - V9, V10, V11, V12, V13
Overloaded picture - V8, V12

SYNC FAILURE
No vert. sync - V16, V17
No horiz. sync - V16, V19, V20
No vert. or horiz. sync. - V14, V15, V16

SWEEP FAILURE
No raster, has sound - V20, V21, V22, V23, V26, Fuse (M2)
No vert. deflection - V17
Poor vert. linearity or foldover - V17
Poor horiz. linearity or foldover - V20, V21, V22
Narrow picture - V20, V21, V22, V23, V24, V25
Vert. off freq. - V16, V17
Horiz. off freq. - V16, V19, V20

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage lead should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator tube to disable the high voltage.

VIDEO IF ALIGNMENT

Remove the converter tube (V2) from its socket and replace with a 6J6 which has pin 1 removed.
This will disable the local oscillator and reduce the possibility of erroneous indications.
Connect the negative lead of a 6 volt bias source to the ungrounded side of C35. Connect the positive lead to chassis.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	Not used	26.4MC (Unmod.)	Any	DC probe to point (A). Common to chassis.	A1	Adjust for MINIMUM deflection. Use zero bias.
2.	"	"	"	20.4MC	"	"	A2, A3	"
3.	"	"	"	21.9MC	"	"	A4	"
4.	"	"	"	25.2MC	"	"	A5	Use 6 volt bias. Adjust for maximum deflection.
5.	"	"	"	23.5MC	"	"	A6	"
6.	"	"	"	25.9MC	"	"	A7	"
7.	"	"	"	22.8MC	"	"	A8	"
8.	"	"	24MC (10MC Swp)	23.0MC 26.4MC 21.9MC 25.5MC	"	Vert. Amp. of scope thru 47KΩ to point (A). Low side to chassis.	A9, A10	Shunt 470Ω resistors across primaries of Video IF transformers (from screen to plate of V3, V4, V5 and V6). Adjust for response similar to Fig. 1.
9.	"	"	"	23.0MC 26.4MC	"	"		Remove the four 470Ω resistors use in Step 8. Check for overall response similar to Fig. 2. If necessary slightly retouch A4 through A10 for desired response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Remove V6 from its socket during Sound IF Alignment.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
10.	.001MFD	High side to point (A) Low side to chassis.	4.5MC (Unmod)	Any	DC probe to point (B) Common to chassis.	A11, A12, A13, A14	Adjust for maximum deflection.
11.	"	"	"	"	DC probe to point (C) Common to chassis.	A15	Adjust for a zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.
Remove V6 from its socket during Sound IF Alignment.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
10.	.001MFD	High side to point (A) Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any	Vert. Amp. to point (B). Low side to chassis.	A11, A12 A13, A14	Disconnect stabilizer capacitor C7. Adjust for curve of maximum amplitude and symmetry as in Fig. 3.
11.	"	"	"	"	"	Vert. Amp. to point (B). Low side to chassis.	A15	Reconnect capacitor C7. Adjust so that 4.5MC occurs at center of crossover lines as in Fig. 4. SLIGHTLY retouch A14 for maximum amplitude and straightness of crossover lines.

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.
Use 6 volt bias as under Video IF Alignment.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
12.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. Amp. thru 47KΩ to point (A). Low side to chassis.	A16	Adjust to place video marker at approximately 55% on the high frequency side of the response curve.
			207MC (10MC Swp)	205.25MC 209.75MC	12		A17	
			201MC (10MC Swp)	199.25MC 203.75MC	11		A18	
			195MC (10MC Swp)	193.25MC 197.75MC	10		A19	
			189MC (10MC Swp)	187.25MC 191.75MC	9		A20	
			183MC (10MC Swp)	181.25MC 185.75MC	8		A21	
			177MC (10MC Swp)	175.25MC 179.75MC	7		A22	
			85MC (10MC Swp)	83.25MC 87.75MC	6		A23	
			79MC (10MC Swp)	77.25MC 81.75MC	5		A24	
			69MC (10MC Swp)	67.25MC 71.75MC	4		A25	
			63MC (10MC Swp)	61.25MC 65.75MC	3		A26	
			57MC (10MC Swp)	55.25MC 59.75MC	2		A27	

ALIGNMENT INSTRUCTIONS (CONT.)

RF AND MIXER ALIGNMENT

Connect the negative lead of a 3 volt battery to the ungrounded side of C6. Connect the positive lead to chassis.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
13.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC Swp)	205.25MC 209.75MC	12	Vert. Amp. thru 10KΩ to point Ⓓ. Low side to chassis.	A28, A29, A30	Adjust for response curve of maximum amplitude and band width similar to Fig. 5.
14.	"	"	213MC (10MC Swp)	211.25MC 215.75MC	13	"		Check for response similar to Fig. 5. If markers fall below 70% on any channel, make slight compromise adjustments of A28, A29 and A30 with channel switch set to that channel then check all other channels to see that they have not been seriously affected.
			201MC (10MC Swp)	199.25MC 203.75MC	11			
			195MC (10MC Swp)	193.25MC 197.75MC	10			
			189MC (10MC Swp)	187.25MC 191.75MC	9			
			183MC (10MC Swp)	181.25MC 185.75MC	8			
			177MC (10MC Swp)	175.25MC 179.75MC	7			
			85MC (10MC Swp)	83.25MC 87.75MC	6			
			79MC (10MC Swp)	77.25MC 81.75MC	5			
			69MC (10MC Swp)	67.25MC 71.75MC	4			
			63MC (10MC Swp)	61.25MC 65.75MC	3			
			57MC (10MC Swp)	55.25MC 59.75MC	2			

4.5MC TRAP ALIGNMENT

Tune in a TV test pattern and adjust A31 for maximum vertical wedge definition, or using a TV station picture, adjust for minimum 4.5MC beat indication in picture.

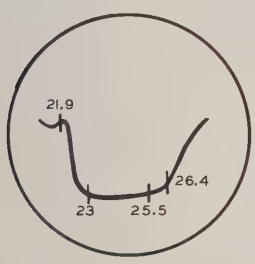


FIG. 1

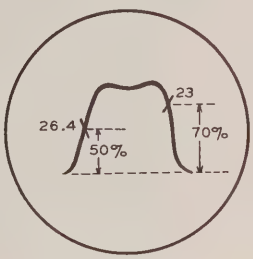


FIG. 2

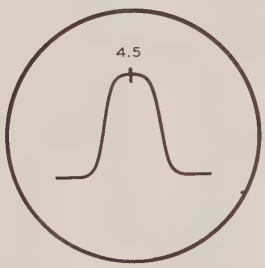


FIG. 3

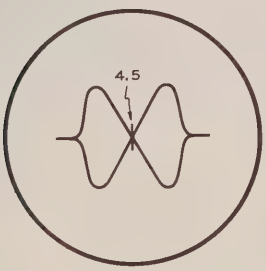


FIG. 4

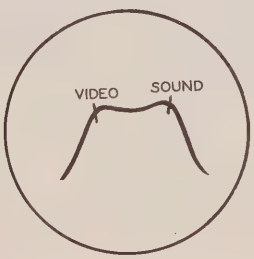
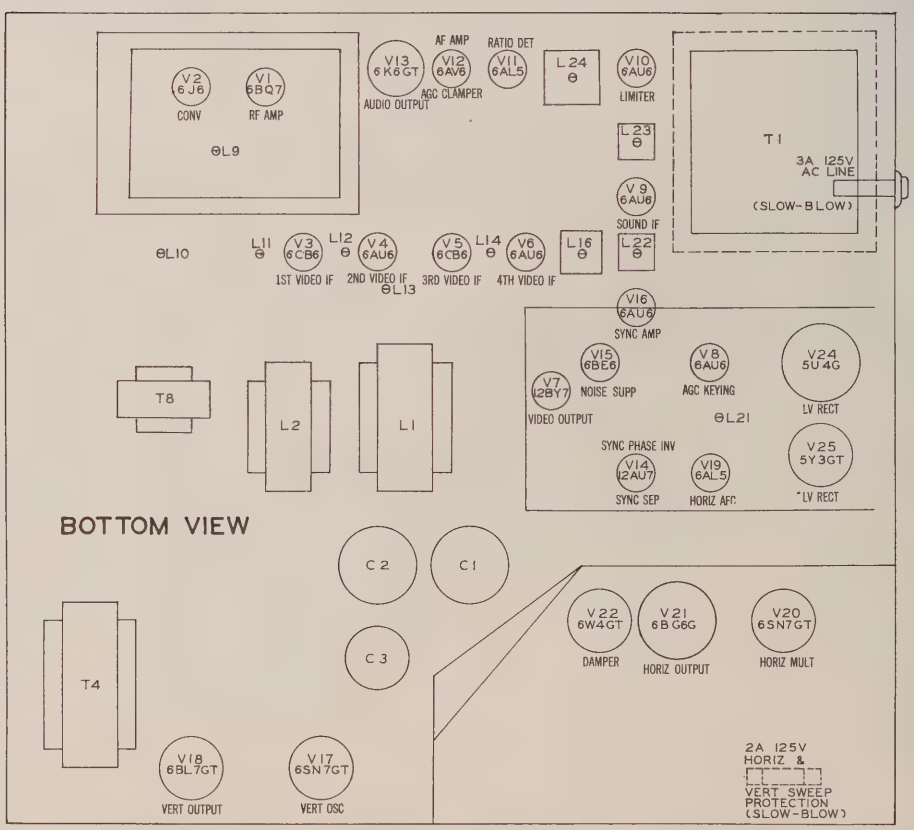


FIG. 5

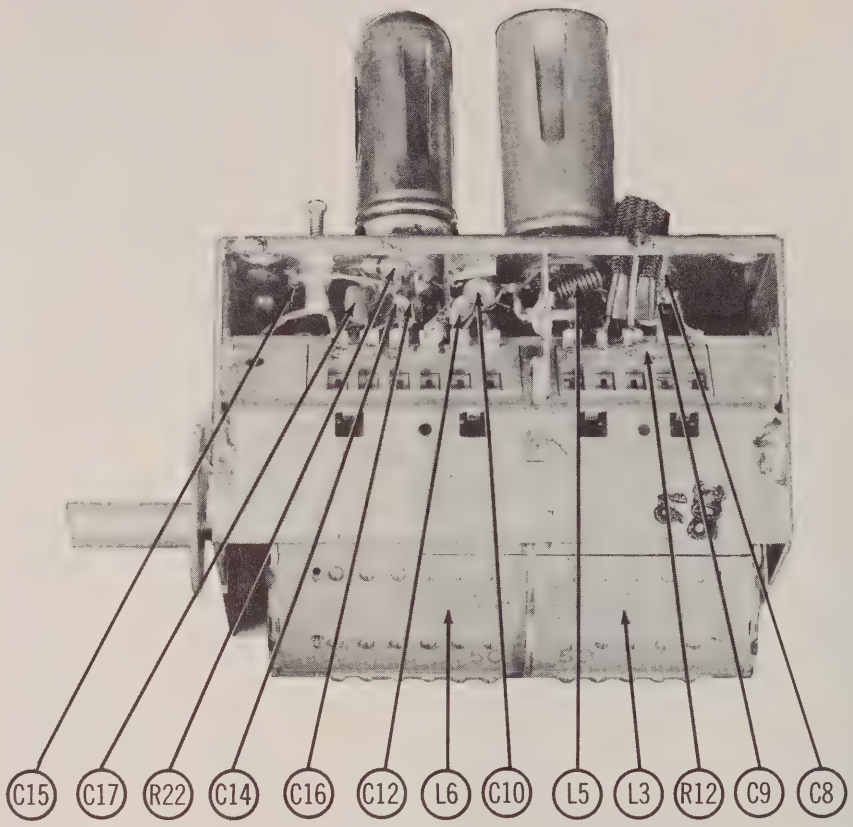
RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BQ7	INF	1.3Meg	0Ω	.1Ω	0Ω	†6.3KΩ	†160KΩ	INF	0Ω
V 2	6J6	#13KΩ	#4.4KΩ	.1Ω	0Ω	230KΩ	10KΩ	0Ω		
V 3	6CB6	50KΩ	147Ω	0Ω	.1Ω	#415Ω	#415Ω	100Ω		
V 4	6AU6	80KΩ	0Ω	0Ω	.1Ω	#415Ω	#415Ω	100Ω		
V 5	6CB6	.2Ω	150Ω	0Ω	.1Ω	#415Ω	#415Ω	0Ω		
V 6	6AU6	.2Ω	0Ω	0Ω	.1Ω	#2.4KΩ	#2.4KΩ	150Ω		
V 7	12BY7	300Ω	1 Meg	0Ω	0Ω	0Ω	.1Ω	†4.5KΩ	†33KΩ	0Ω
V 8	6AU6	#35KΩ	#85Ω	♦0Ω	♦.1Ω	175KΩ	†95Ω	#85Ω		
V 9	6AU6	.2Ω	0Ω	.1Ω	0Ω	#1KΩ	#1KΩ	270Ω		
V 10	6AU6	470KΩ	0Ω	0Ω	.1Ω	#1KΩ	#1KΩ	68Ω		
V 11	6AL5	INF	INF	0Ω	.1Ω	10KΩ	0Ω	9.5KΩ		
V 12	6AV6	2.2 Meg	0Ω	0Ω	.1Ω	1.3Meg	1.3Meg	#330KΩ		
V 13	6K6GT	.1Ω	0Ω	†1KΩ	†560KΩ	1 Meg	†4.8KΩ	.1Ω	470Ω	
V 14	6AU6	38KΩ	0Ω	0Ω	.1Ω	#9KΩ	#85Ω	100Ω		
V 15	6BE6	50KΩ	0Ω	0Ω	.1Ω	#27KΩ	†100KΩ	1 Meg		
V 16	12AU7	#27KΩ	†125KΩ	15KΩ	0Ω	0Ω	#2.8KΩ	1 Meg	5.4KΩ	.1Ω
V 17	6SN7GT	13KΩ	#85Ω	4.7KΩ	1.4Meg	■750KΩ	0Ω	0Ω	.1Ω	
V 18	6BL7GT	2.2Meg	†800Ω	950Ω	2.2Meg	†800Ω	950Ω	.1Ω	0Ω	
V 19	6AL5	1 Meg	1 Meg	0Ω	.1Ω	100KΩ	0Ω	100KΩ		
V 20	6SN7GT	470KΩ	†5.8KΩ	910Ω	90KΩ	■180KΩ	910Ω	0Ω	.1Ω	
V 21	6BG6G	†1.1KΩ	.1Ω	0Ω	INF	560KΩ	560KΩ	0Ω	†2.3KΩ	Top Cap ■10Ω
V 22	6W4GT	INF	INF	360KΩ	INF	†110Ω	INF	■90Ω	■9.1Ω	
V 23	1B3GT	PINS 1 - 8 HAVE INF RESISTANCE								Top Cap ■235Ω
V 24	5U4G	INF	100KΩ	INF	19Ω	INF	18Ω	470KΩ	100KΩ	
V 25	5Y3GT	INF	55KΩ	120KΩ	11Ω	135Ω	11Ω	INF	55KΩ	
V 26	17HP4A	♦0Ω	80KΩ	Pin 6 480KΩ	Pin 10 ■150KΩ	Pin 11 #225KΩ	Pin 12 ♦.1Ω			

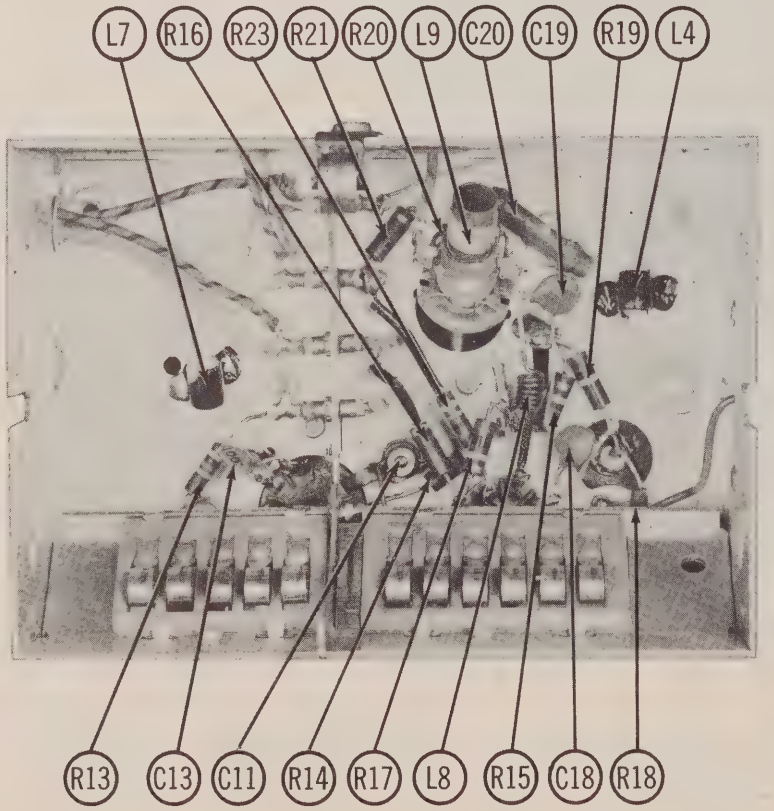
† MEASURED FROM PIN 2 OF V24 .
# MEASURED FROM PIN 2 OF V25 .
■ MEASURED FROM PIN 3 OF V22.
♦ MEASURED FROM PIN 7 OF V8.



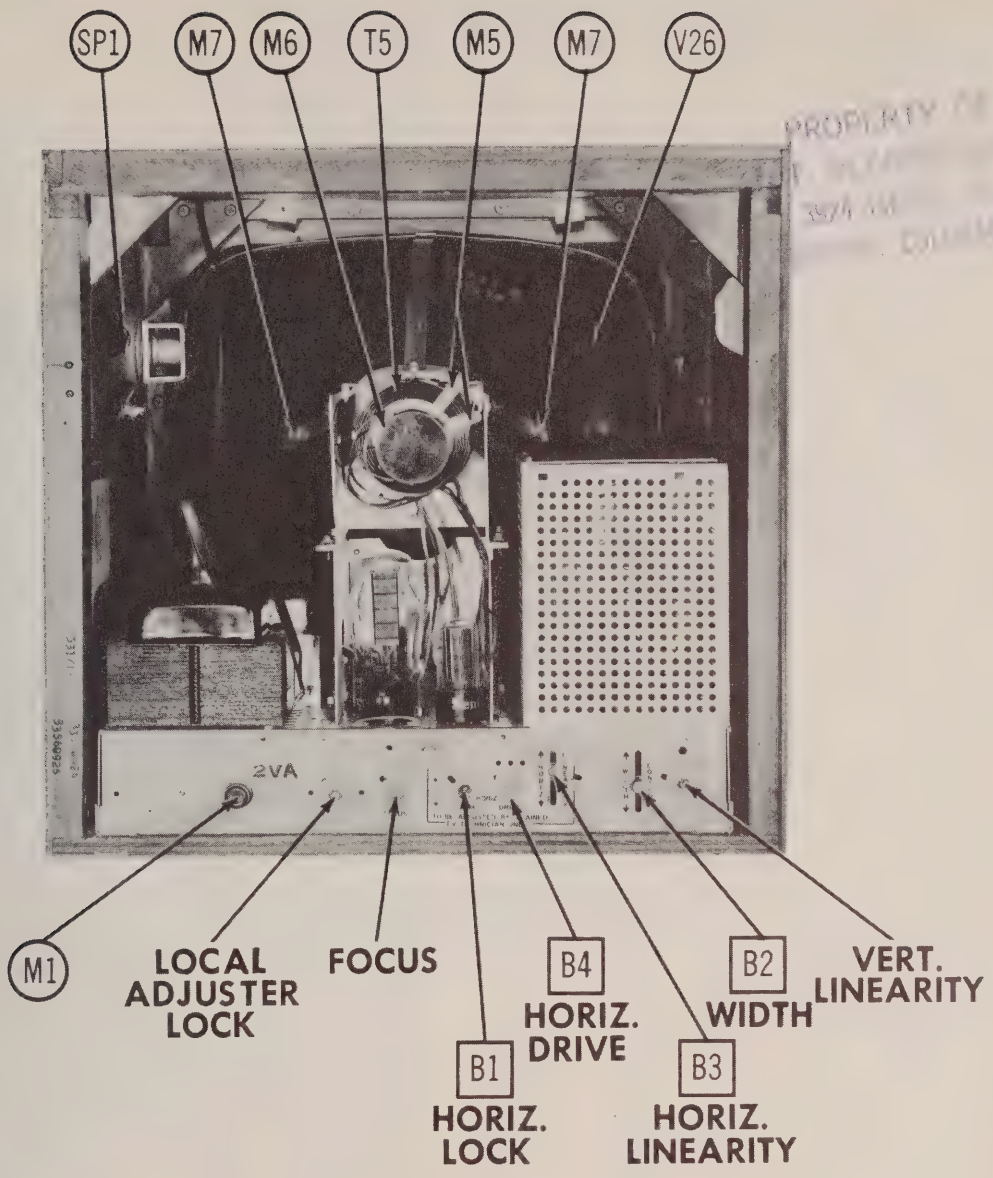
TUBE PLACEMENT CHART



RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

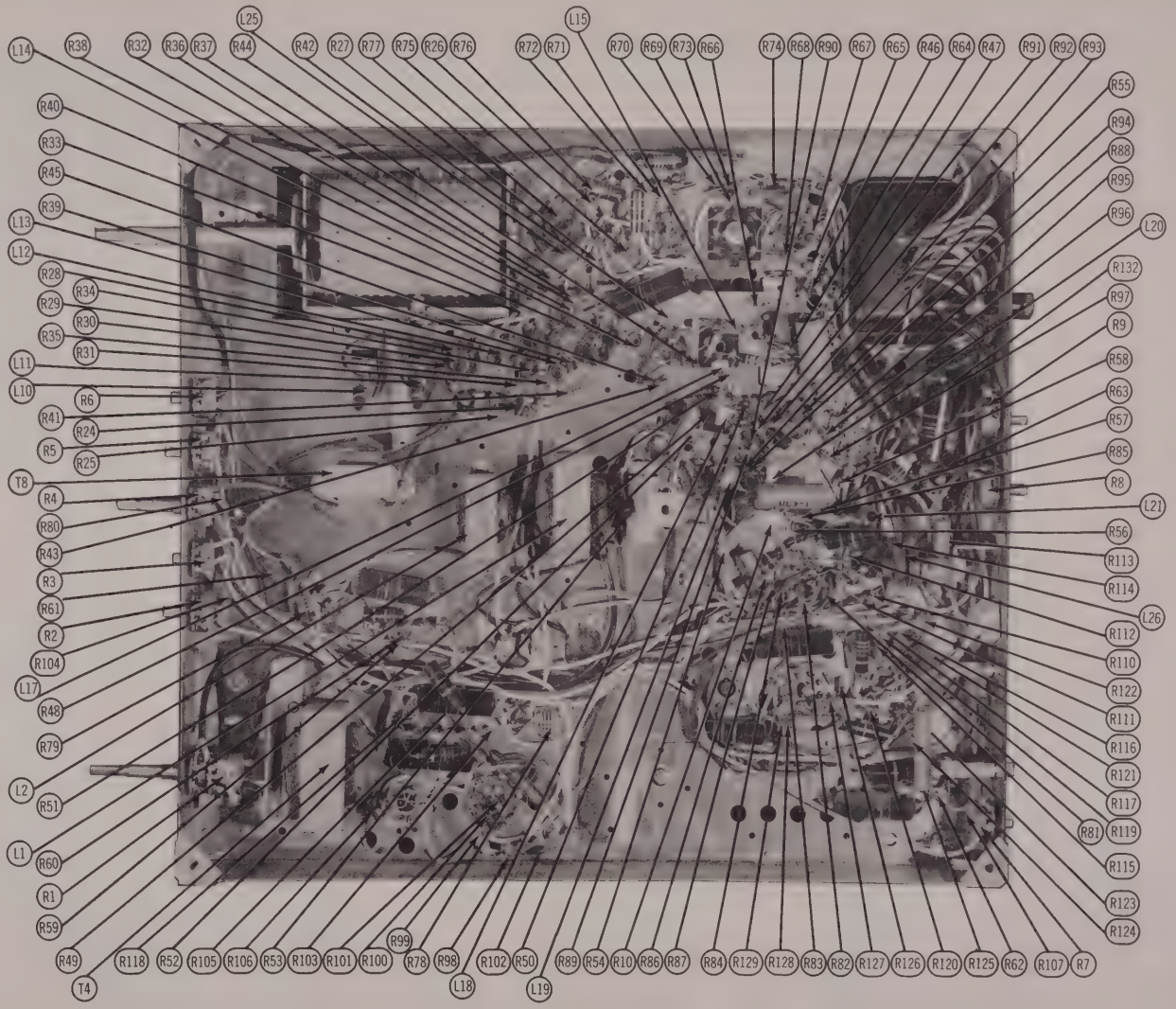
Set the horizontal hold at the mid-position of its range and adjust the horizontal lock slug (B1) until the picture synchronizes horizontally.

Move width control slug (B2) to its upper most position. Move horizontal linearity control slug (B3) to bottom position.

Adjust the horizontal drive trimmer (B4) Clockwise as far as possible without the presence of vertical white lines or compression of the center of picture.

Readjust B2 for a picture slightly wider than necessary to fill the picture mask horizontally.

Readjust B3 for a picture that is symmetrical from left to right.



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: Sentinel PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	NOTES
V1	RF Amplifier	6BQ7	6BQ7	9AJ	
V2	Converter	6J6	6J6	7BF	
V3	1st. Video IF Amp.	6CB6	6CB6	7CM	
V4	2nd. Video IF Amp.	6AU6	6AU6	7BK	
V5	3rd. Video IF Amp.	6CB6	6CB6	7CM	
V6	4th. Video IF Amp.	6AU6	6AU6	7BK	
V7	Video Output	12BY7	12BY7	9BF	
V8	AGC Keying	6AU6	6AU6	7BK	
V9	Sound IF Amp.	6AU6	6AU6	7BK	
V10	Limiter	6AU6	6AU6	7BK	
V11	Ratio Detector	6AL5	6AL5	6BT	
V12	AF Amplifier-AGC Clamper	6AV6	6AV6	7BT	
V13	Audio Output	6K6GT	6K6GT	7S	
V14	Sync Amplifier	6AU6	6AU6	7BK	
V15	Noise Suppressor	6BE6	6BE6	7CH	
V16	Sync Amp. Sync Phase Inv.	12AU7	12AU7	9A	
V17	Vert. Oscillator	6SN7GT	6SN7GT	8BD	
V18	Vert. Output	6BL7GT	6BL7GT	8BD	
V19	Horiz. AFC	6AL5	6AL5	6BT	
V20	Horiz. Mult.	6SN7GT	6SN7GT	8BD	
V21	Horiz. Output	6BG6GT	6BG6GT	5BT	
V22	Damper	6W4GT	6W4GT	4CG	
V23	HV Rectifier	1B3GT	1B3GT	3C	
V24	LV Rectifier	5U4G	5U4G	5T	
V25	LV Rectifier	5Y3GT	5Y3GT	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: SENTINEL PART No.	SYLVANIA PART No.		RTMA BASE TYPE	NOTES
V26A	17HP4A	17HP4A 17HP4 17RP4		12C	
B	21FP4A			12C	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA: SENTINEL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	▲60	450	25E36	AFH2-61		BO54		FP240	TVL-2770	
B	▲40	450								
C2A	▲10	450	25E68	AFH4-109		BO46		FP240	TVL-2770	Note 1
B	■40	250				BR4025A		TC72	TVA-1705	Note 1
C	▲60	250								Note 1
C3A	20	25	25E69	AFH3-157		BO63			R1295	
B	■10	450				BRH501				
C	▲100	50								
C4	10	450	25E70	PRS450/10		BR1045A		TC72	TVA-1705	
C5	100	10	25E12	PRS12/100		BRH121A		TC2501	TVA-1130	
C6	4	50	25E23	PRS150/4		BR550		TC30	TVA-1303	
C7	10	25	25E8	PRS25/10		BR102A		TC22	TVA-1204	
C8	3-9		31A-079		829-10					
C9	3.9		CD8C030C							
C10	1.5		CD8C1R5M	SI1.5NP0	TCZ-1.5		NP0K-1R5		5TCCB-V15	
C11	.5-3		31A-069		829-3			CT565A		
C12	47		CD8Q470K	BPD-000047	D6-470	TM5Q5	GP1K-470	UC-5447	5GA-Q47	
C13	1000		CD8Y102Z	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C14	47		CD8Q470K	BPD-000047	D6-470	TM5Q5	GP1K-470	UC-5447	5GA-Q47	
C15	.5-3		31A-069		829-3			CT565A		
C16	10		CD10C100K	SI10NP0	TCZ-10		NP0K-100	ZT-541	5TCC-Q1	
C17	5		CD8U050C	SI5N750			N750K-050	NT-545	5TCUB-V5	
C18	1000		CD8Y102Z	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C19	6.8		CD8C6R86	SI6.8NP0	TCZ-6.8		NP0K-6R8	ZT-5568	5TCCB-V68	
C20	130		13D-210		TCZ-131		NP0-333-131			
C21	15		23E2030-18	SI15NP0	TCZ-15		NP0K-150	ZT-5415	5TCC-Q15	
C22	100		23E2027	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C23	1000		23E2025-3	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C24A	1500		23E2037-5	BPD-2X0015	DD-2-152	TM5DD15	812-0015	DCD-5215	5HK-2D15	
B	1500									
C25	1000		23E2025-3	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	Note 2
C26	68		23E2030-19							
C27A	1500		23E2037-5	BPD-2X0015	DD-2-152	TM5DD15	812-0015	DCD-5215	5HK-2D15	
B	1500									
C28	1000		23E2025-3	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	Note 2
C29	68		23E2030-19							
C30	1000		23E2025-3	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C31	1000		23E2025-3	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C32	68		23E2030-19							
C33	1000		23E2025-3	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C34	1000		23E2025-3	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C35	.22	200	23E3218	P488-22		PTE4P22		PT4025	2TM-P22	
C36	220			SI220	D6-221	5W5T25	GP2K-221	UC-5322	5GA-T22	Note 2
C37	.047	200	23E3214	P288-047	DF-503	PTE4S47		PT4147	2TM-S47	
C38	.1	400	23E3416	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C39	100		23E3	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C40	.1	600	23E3616	P688-1	DF-104	PTE6P1		PT601	6TM-P1	
C41	.22	200	23E3218	P488-22		PTE4P22		PT4025	2TM-P22	
C42	2		23E21				NP0K-020			
C43	3		23E20				NP0K-030			
C44A	4000		23E2037	BPD-2X004	D6-402	TM5DD4	822-004	DCD-524	5HK-2D4	
B	4000				D6-402					
C45	100		23E2027-2	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C46A	4000		23E2037	BPD-2X004	D6-402	TM5DD4	822-004	DCD-524	5HK-2D4	
B	4000				D6-402					

PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (CONT.)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA SENTINEL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C47	500	500	23E45-10	1469-0005		5R5T5			MS-35	Note 3
C48	500	500	23E45-10	1469-0005		5R5T5			MS-35	Note 3
C49	500	500	23E45-10	1469-0005		5R5T5			MS-35	
C50	.0022	400	23E3206	P688-0022	D6-332	PTR4S1	GP2-333-222	PT6222	67M-D22	
C51	.01	400	23E3210	P688-01	D6-103	PTR4S1	GP2-333-103	PT411	67M-S1	
C52	.01	400	23E3210	P688-01	D6-103	PTR4S1	GP2-333-103	PT411	67M-S1	
C53	.01	600	23E3416	P688-01	D6-103	PTE6S1	GP2-333-103	PT611	67M-S1	
C54	.047	600	23E3614	P688-047	DF-503	PTE6S47		PT6147	67M-S47	
C55	.0047	600	23E3608	P688-0047	D6-472	PTE6D47	GP2-333-473	PT6247	67M-D47	
C56	.01	400	23E3410	P688-01	D6-103	PTR4S1	GP2-333-103	PT411	67M-S1	Note 4
C57	.047	600	23E3614	P688-047	DF-503	PTE6S47		PT6147	67M-S47	
C58	.1	200	23E3416	P288-1	DF-104	P2P1		PT401	27M-P1	
C59	.047	400	23E3414	P688-047	DF-503	PTR4S47		PT4147	47M-S47	
C60A	.002		}	P688-002		PTE6D2		PT622		
B	.005		} a23E3023-5	P688-005	} aPC-100	PTE6D5	} a1405-01	PT625	} a101C1	
C	.005		}	P688-005	}	PTE6D5	}	PT625	}	
C61	.0047	200	23E3408	P688-0047	D6-472	PTE6D47	GP2-333-473	PT6247	67M-D47	
C62	.01	600	23E3610	P688-01	D6-103	PTE6S1	GP2-333-103	PT611	67M-S1	
C63	.01	400	23E3410	P688-01	D6-103	PTR4S1	GP2-333-103	PT411	47M-S1	
C64	.1	600	23E3616	P688-1	DF-104	PTE6P1		PT601	67M-P1	
C65	.1	600	23E3616	P688-1	DF-104	PTE6P1		PT601	67M-P1	
C66	1000		23E2025-3	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C67	1000		23E2025-3	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C68	.047	600	23E3614	P688-047	DF-503	PTE6S47		PT6147	67M-S47	
C69	250	2000	23E2027	BZ50	D6-251	PTR4S251	GP3E-251	DC-5325	5CA-T25	
C70	.0033	600	23E3407	P688-0033	D6-332	PTE6D33	GP2-333-332	PT6233	5HK-D33	
C71	.0047	400	23E3208	P688-0047	D6-472	PTE6D47	GP2-333-472	PT6247	5TM-D47	
C72	.047	200	23E3314	P288-047	DF-503	PTE4S47		PT4147	27M-S47	
C73	.22	200	23E3218	P488-22		PTE4P22		PT4025	27M-P22	
C74	.01	400	23E3410	P488-01	D6-103	PTR4S1	GP2-333-103	PT411	47M-S1	
C75	600	1000	23E2030-13							
C76	4000	500	23E85	1464-004		1DR5D4		MCB403	MS-24	
C77	500	2000	23E2030-9							
C78	250	2000	23E2030-3							
C79	.001	1000	23E31004	P1088-001		PTE16D1		PT1621	MB-D1	
C80	.047	600	23E3614	P688-047	DF-503	PTE6S47		PT6147	67M-S47	
C81	.047	600	23E3614	P688-047		PTE6S47		PT6147	67M-S47	
C82	.047	600	23E3614	P688-047		PTE6S47		PT6147	67M-S47	
C83	.1	600	23E3616	P688-1	DF-104	PTE6P1		PT601	67M-P1	
C84	.047	600	23E3614	P688-047	DF-503	PTE6S47		PT6147	67M-S47	
C85	.1	600	23E3616	P688-1	DF-104	PTE6P1		PT601	67M-P1	
C86	500	20000	23E2039	HV20C	TV3-502	MM-C20T5	413-501		20DK-T5	
C87A	10000		23E3037-6	BPD-01	DD-3-103	TM5D81	921-01	DC-511	5HK-381	
B	10000			BPD-01			821-01	DC-511		
C88	56	2000	23E2030-11							

Note 1. Some models use 60MFD (C2A) and 20MFD (C2C).
Note 2. Not used in all models.
Note 3. Not used in models using Ratio Det. Trans. part #23E827.
Note 4. Some models use a .033MFD in this application. (Part #23E343)
* Items C60A, C60B, C60C, R99A, R99B, R99C are combined in one unit.

CONTROLS

ITEM No	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA SENTINEL PART No	IRC PART No	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1000Ω		28E91	QJ-422*	RTV-392		UF13L	Contrast-Panel
B	500KΩ						UR55A	† Volume-Rear
C	Switch						US-26	Attach to R1A
R2A	2 Meg		28E72	QH-139	AG-83-S	AB-75	SU-56	Vert. Hold
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R2A
R3A	250KΩ		28E79	QH-130	AG-55-S	AB-50	SU-46	Vert. Size
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R3A
R4A	150KΩ		28E75		AG-51-Z	AB-44	U-42	Tone
B	Shaft		Not Req.		KSS-3	AK-4	Not Req.	Attach to R4A
R5A	35KΩ		28E92		AG-43-S	AB-31	SU-35	Brightness
B	Shaft		Not Req.		FKS-1/4	AK-1	Not Req.	Attach to R5A
R6A	50KΩ		28E43	QH-123	AG-44-S	AB-31	SU-35	Horiz. Hold
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R6A
R7A	2000Ω		28E80	QH-110	AG-11-S	AB-8	U-6	Vert. Linearity
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R7A
R8A	2 Meg		28E72	QH-139	AG-83-S	AB-75	SU-56	Focus
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R8A
R9A	5 Meg		28E93	QJ-141	AG-85 S	AB-87	SU-67	Locality
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R9A
R10	1000Ω	1	28E81					Video Load Adjustment-Wire Wound
R11A	2 Meg		28E72	QH-139	AG-83-S	AB-75	SU-56	AGC
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R11A

* CONCENTRIKIT EQUIVALENT - KIT K-2, BASE ELEMENTS AND SHAFTS B17-108 & P6-112 (Panel)
R13-133 & R9-208 (Rear) & SWITCH 76-1.
† UNIVERSAL REPLACEMENT (MALLORY EXACT DUPLICATE PART NO. UE508).

RESISTORS

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA SENTINEL PART No.	IRC PART No.	NOTES
R12	15KΩ		27E153-2	BTS-15K	
R13	47KΩ		27E473-3	BTS-47K	
R14	100KΩ-5%		27E1009-27		
R15	180KΩ-5%		27E1009-25		
R16	150Ω		27E152-3	BTS-1500	
R17	100KΩ-5%		27E1009-27	BTS-100K-5%	
R18	10KΩ		27E103-2	BTS-10K	
R19	220KΩ		27E224-3		
R20	10KΩ-5%		27E1009-35	BTS-10K-5%	
R21	1000Ω		27E102-2	BTS-1000	
R22	10KΩ		27E103-2	BTS-10K	
R23	10KΩ		27E103-2	BTS-10K	
R24	3300Ω	1	27E332-3	BTA-3300	
R25	4700Ω-5%	2	27E472-5	BTB-4700-5%	
R26	10 Meg		27E108-2	BTS-10 Meg	
R27	330Ω		27E331-2	BTS-330	
R28	4700Ω-5%		27E1009-26	BTS-4700-5%	
R29	47Ω		27E470-2		
R30	100Ω		27E101-2	BTS-100	
R31	330Ω		27E331-2	BTS-330	
R32	330Ω		27E331-2	BTS-330	
R33	6800Ω-5%		27E1009-35	BTS-6800-5%	
R34	100Ω		27E101-2	BTS-100	
R35	330Ω		27E331-2	BTS-330	
R36	82KΩ		27E823-2	BTS-82K	
R37	180KΩ-5%		27E1009-50	BTS-180K-5%	
R38	10KΩ-5%		27E1009-25		
R39	1500Ω		27E152-2	BTS-1500	

RESISTORS (CONT.)

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA SENTINEL PART No.	IRC PART No.	NOTES
R40	150Ω		27E151-2	BTS-150	
R41	330Ω		27E331-2	BTS-330	
R42	2200Ω		27E1009-52	BTS-2200	
R43	150Ω		27E151-2	BTS-150	
R44	1000Ω		27E102-2	BTS-1000	Note 5
R45	1000Ω		27E102-2	BTS-1000	
R46	56KΩ		27E563-2	BTS-56K	
R47	150KΩ		27E154-2	BTS-150K	
R48	5600Ω		27E562-2	BTS-5600	
R49	470Ω		27E471-2	BTS-470	
R50	4700Ω		27E1009-26	BTS-4700	
R51	270Ω		27E271-2		
R52	1 Meg		27E105-2	BTS-1 Meg	
R53	100 Ω		27E100-3	BTS-100	
R54	33KΩ		27E333-3	BTA-33K	
R55	10KΩ		27E103-2	BTS-10K	
R56	39000-5%	2	27E1009-49	BTB-3900-5%	
R57	560KΩ		27E1009-11	BTS-560K	
R58	470KΩ-5%		27E1009-49	BTS-470K-5%	
R59	22KΩ		27E223-2	BTS-22K	
R60	27KΩ		27E273-2	BTS-27K	
R61	18KΩ		27E183-2	BTS-18K	
R62	150KΩ-5%		27E1009-48	BTS-150K-5%	
R63	47KΩ		27E473-2	BTS-47K	
R64	270Ω		27E271-2	BTS-270	
R65	1000Ω		27E102-2	BTS-1000	
R66	470KΩ		27E474-2	BTS-470K	
R67	68Ω		27E680-2		
R68	1000Ω		27E102-2	BTS-1000	
R69	270Ω		27E271-2	BTS-270	Note 1
R70	39KΩ		27E393-2	BTS-39K	
R71	33000-5%		27E1009-29	BTS-3300-5%	Note 1
R72	6800Ω-5%		27E1009-13	BTS-6800-5%	Note 1
R73	2700Ω-5%		27E1009-28	BTS-2700-5%	Note 1
R74	6800Ω-5%		27E1009-13	BTS-6800-5%	Note 1
R75	2.2Meg		27E225-2	BTS-2.2Meg	
R76	330KΩ		27E334-2	BTS-330K	
R77	1 Meg		27E105-2	BTS-1 Meg	
R78	470Ω		27E471-3	BTA-470	
R79	470Ω		27E471-3	BTA-470	
R80	2200Ω		27E222-2	BTS-2200	
R81	1 Meg		27E105-2	BTS-1 Meg	
R82	2700Ω-5%		27E1009-28	BTS-2700-5%	
R83	2700Ω-5%		27E1009-28	BTS-2700-5%	
R84	2700Ω-5%		27E1009-28	BTS-2700-5%	
R85	15KΩ		27E153-2	BTS-15K	
R86	270KΩ		27E274-2	BTS-270K	
R87	27KΩ		27E273-2	BTS-27K	

RESISTORS (CONT.)

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA SENTINEL PART No.	IRC PART No.	NOTES
R88	100KΩ		27E104-2	BTS-100K	Note 2
R89	68KΩ		27E683-2	BTS-68K	
R90	1 Meg		27E105-2	BTS-1 Meg	
R91	1 Meg		27E105-2	BTS- 1 Meg	
R92	47KΩ		27E473-2	BTS-47K	
R93	33KΩ		27E333-2	BTS-33K	
R94	100Ω		27E101-2	BTS-100	
R95	10KΩ		27E103-2	BTS-10K	Note 3
R96	68KΩ		27E683-2	BTS-68K	
R97	56KΩ		27E563-2	BTS-56K	
R98	15KΩ		27E153-2	BTS-15K	
R99A	22KΩ			BTS-22K	
B	8200Ω		a23E3023-5	BTS-8200	
C	2200Ω			BTS-2200	
R100	15KΩ		27E153-2	BTS-15K	
R101	4700Ω		27E472-2	BTS-4700	
R102	1 Meg		27E105-2	BTS-1 Meg	
R103 *	470KΩ		27E474-2	BTS-470K	
R104	220KΩ		27E224-2	BTS-220K	
R105	6800Ω		27E682-2	BTS-6800	
R106	2.2Meg		27E225-2	BTS-2.2Meg	
R107	470Ω		27E471-2	BTS-470	
R108	560Ω		27E561-2	BTS-560	
R109	560Ω		27E561-2	BTS-560	
R110	100KΩ-5%		27E1009-27	BTS-100K-5%	
R111	100KΩ-5%		27E1009-27	BTS-100K-5%	
R112	100KΩ		27E104-2	BTS-100K	
R113	18KΩ		27E183-2	BTS-18K	
R114	18KΩ		27E183-2	BTS-18K	
R115	470KΩ		27E474-2	BTS-470K	
R116	27KΩ		27E273-2	BTS-27K	
R117	68000Ω		27E682-2	BTS-68000	
R118	4.7MEG		27E475-2	BTS-4.7Meg	
R119	470KΩ		27E474-2	BTS-470K	
R120	9100-5%		27E1009-53	BTS-910-5%	
R121	82KΩ		27E823-2	BTS-82K	
R122	5600Ω-5%		27E1009-8	BTS-5600-5%	
R123	390KΩ-5%		27E1009-40	BTS-390K-5%	
R124	330KΩ-5%		27E1009-9	BTS-330K-5%	
R125	8200Ω-5%		27E1009 22	BTS-8200-5%	
R126	100Ω		27E101-2		
R127	560KΩ		27E1009-11	BTS-560K	
R128	100Ω		27E101-2		
R129	2200Ω			BTA 2200	Note 4
R130	2.2Ω-5%		27E1015-2		
R131	1.2Meg		27E1009-3		
R132	330KΩ		27E334-2	BTS-330K	

Note 1. When alternate ratio det. trans. (Part No. 20E827) is used R72 & R74 are 10KΩ;R71 & R73 are not used. R69 is 470 Ω.
Note 2. Some models use a 47KΩ resistor in this application.
Note 3. Some models use a 5600Ω resistor in this application.
Note 4. Some models use a 1000Ω resistor in this application.
* Items R99A, R99B, R99C, C60A, C60B, C 60C are combined in one unit.
Note 5. Not used in all models.

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA SENTINEL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	RCA PART No.
T1	117VAC @1.92A	618VCT @180ADC tap ⓐ 370VCT .092ADC	5VAC @ 3A SEC. 4 6.3VAC @ 9A SEC. 6 8.3VAC @ 6.7A	5VAC @ 2A SEC. 5 6.3VAC @ 1.2A	22E79					

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE SEC.	REPLACEMENT DATA SENTINEL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	RCA PART No.	NOTES
T2	170Ω 960Ω	22E55-2	A-8125	A-3003	TBO-5	A-97X	208T2 ⓐ	Vert. Osc. Trans. Horiz. Output Trans.
T3	248.5Ω 4.5Ω tap ⓐ SEC. 2 1.5Ω, 4.5Ω, 7.5Ω, 13.5Ω, 23.5Ω 730Ω tap ⓐ 9Ω	22E80						
T4		22E63	A-8123ⓛ	A-3037 ①	TSO-8 ①ⓛ	A-102X ⓛ		Vert. Output Trans.
T5A	10Ω	22E802	DY-9A	MDF-70	TY-3	Y-17	21ID2	Horiz. Deflection Coils
B	49Ω	22E802-2 ③						Vert. Deflection Coils
T6	17Ω	20E688	WC-5	MWC-1	TWL-1	WC-11	21ZR1	Horiz. Lin. Coil
T7	7Ω	20E585				WC-12 ①		Width Coil

① Drill one new mounting hole.
ⓛ Connect as auto trans.
Ⓐ Alternate deflection yoke.
Ⓒ Mount on top of chassis.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA SENTINEL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T8	6KΩ	3.6Ω	450Ω	.5Ω	22E35-3	A-3878	A-2930	RO-13	S-17X ①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS SIZE	RATINGS FIELD	RATINGS V C IMP	REPLACEMENT DATA SENTINEL PART No	JENSEN PART No	QUAM PART No	NOTES
SP1	8"	PM	2.6Ω	1E49	ST-108	6A1	① Alternate 8" PM Speaker
				1E49-2 ⓛ	Mod. P6-X		ⓛ Alternate 10" PM Speaker
				1E43 Ⓐ			
				1E43-2 Ⓒ			
				1E43-3 Ⓒ			

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	RATINGS D. C. RESISTANCE	RATINGS INDUCTANCE @ CURRENT 1000 ~(∿)	REPLACEMENT DATA SENTINEL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
L1	.170ADC	92Ω	2.58 Hy.	22E78	C-3309 ①	C-2994 ①		C-9X ⓛ
L2	.085ADC	94.8Ω	1.9 Hy.	22E77	C-3327	C-2994	TR-1515	

① Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA SENTINEL PART No.	MILLER PART No.	IRC PART No.	NOTES
L3A	Ant. Coil	0Ω CT	0Ω	31F-522			Channel 2
B	Ant. Coil	0Ω CT	0Ω	31F-523			Channel 3
C	Ant. Coil	0Ω CT	0Ω	31F-524			Channel 4
D	Ant. Coil	0Ω CT	0Ω	31F-525			Channel 5
E	Ant. Coil	0Ω CT	0Ω	31F-526			Channel 6
F	Ant. Coil	0Ω CT	0Ω	31F-527			Channel 7
G	Ant. Coil	0Ω CT	0Ω	31F-528			Channel 8
H	Ant. Coil	0Ω CT	0Ω	31F-529			Channel 9
I	Ant. Coil	0Ω CT	0Ω	31F-530			Channel 10
J	Ant.Coil	0Ω CT	0Ω	31F-531			Channel 11
K	Ant.Coil	0Ω CT	0Ω	31F-532			Channel 12
L	Ant.Coil	0Ω CT	0Ω	31F-533			Channel 13
L4	Fil. Choke	0Ω		34A-546			
L5	Neutralizing Coil	0Ω		31B-629			
L5A	RF, Mixer Grid & Osc. Coil	0Ω		31F-632			Channel 2
B	RF, Mixer Grid & Osc. Coil	0Ω		31F-623			Channel 3
C	RF, Mixer Grid & Osc. Coil	0Ω		31F-624			Channel 4
D	RF, Mixer Grid & Osc. Coil	0Ω		31F-625			Channel 5
E	RF, Mixer Grid & Osc. Coil	0Ω		31F-626			Channel 6
F	RF, Mixer Grid & Osc. Coil	0Ω		31F-627			Channel 7
G	RF, Mixer Grid & Osc. Coil	0Ω		31F-628			Channel 8
H	RF, Mixer Grid & Osc. Coil	0Ω		31F-629			Channel 9
I	RF, Mixer Grid & Osc. Coil	0Ω		31F-630			Channel 10
J	RF, Mixer Grid & Osc. Coil	0Ω		31F-631			Channel 11
K	RF, Mixer Grid & Osc. Coil	0Ω		31F-632			Channel 12
L	RF, Mixer Grid & Osc. Coil	0Ω		31F-633			Channel 13
L7	Fil. Choke	0Ω		34A-575			
L8	RF Choke	0Ω		31B-638			
L9	Conv.Plate	.7Ω		31A-695			
L10	21.9MC Trap	.2Ω		20E-725		6171 ▲	
L11	1st. Video IF	.3Ω		20E-720		6188 *	
L12	2nd. Video IF	.2Ω	.2Ω	20E-799			Includes Trap
L13	3rd. Video IF	.2Ω	.2Ω	20E-800			Includes Trap
L14	4th. Video IF	.2Ω	.2Ω	20E-803			Includes Trap
L15	Fil. Choke	1.3Ω		2E-92		CLA	1.5 Microhenries
L16	5th. Video IF	.2Ω	.2Ω	20E-801			Includes IN60 Crystal detector and 10MMF capacitor
L17	Series Peaking Coil	8Ω		20E363-24	4642		114 Microhenries
L18	Shunt Peaking Coil	13Ω		20E363-22	4648		396 Microhenries
L19	Series Peaking Coil	9.5Ω		20E363-23	6181		260 Microhenries
L20	Shunt Peaking Coil	13Ω		20E363-22	4648		396 Microhenries
L21	4.5MC Trap	.4Ω		20E-721	1470		
L22	1st.Sound IF	5.5Ω		20E-797			Tapped Ⓐ 2Ω
L23	2nd.Sound IF	2.8Ω	3Ω	20E-796	6203		
L24	Ratio Det.	3.6Ω	.6OCT	20E-769 ■	6205 †		Tertiary Winding - .3Ω
L25	Fil. Choke	.3Ω		2E-78			
L26	Horiz. Osc.	60Ω		20E-409	6210		

* Enlarge mounting hole- Alternate part #6171, 6171A
■ Some Models use alternate ratio det. (Part #20E827) in this application.
▲ Enlarge mounting holes.

SENTINEL MODELS
1U-458, 1U-459, 1U-460, 1U-461

PARTS LIST AND DESCRIPTIONS (Continued)

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			SENTINEL PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG Slo-Blo	3A 125V	40E8-10	55E7	313003 (3AG-3A-Slo-Blo)	342001	MDL3	HKP
M2	3AG Slo-Blo	2/10A 125V	40E8-8		313.200 (3AG-2/10A-Slo-Blo)	357001	MDL-2/10	4405

MISCELLANEOUS

ITEM No.	PART NAME	SENTINEL PART No.	NOTES
M3	RF Tuner	20E795	
M4	Crystal	95E1	1N60
M5	Centering Magnet		
M6	Ion Trap	15E174-4	
M7	Correction Magnet	20EE726	
B4	Trimmer	24E16	Horiz. Drive (300-460)
	Back Assembly	20E694-10	(with line cord), Model 458
	Back Assembly	20E694-9	(with line cord), Models 459, 460, and 461
	Safety Glass	9E45-3	Models 458 and 459
	Safety Glass	9E45	Models 460 and 461
	Mask	36E84-2	Models 458 and 459
	Mask	36E83	Models 460 and 461
	Knob	37E71-5	Fine Tuning,
	Knob	37E71-6	Contrast
	Knob	37E72-11	Channel Selector
	Knob	37E72-12	Off/On Volume
	Knob	37E73-9	Tone

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustments of the RF Tuner Oscillator Circuit may be accomplished by removal of the Channel Selector and Fine Tuning knobs. The adjustments are accessible, one at a time, through the small hole in the cabinet to the right of the Channel Selector shaft.

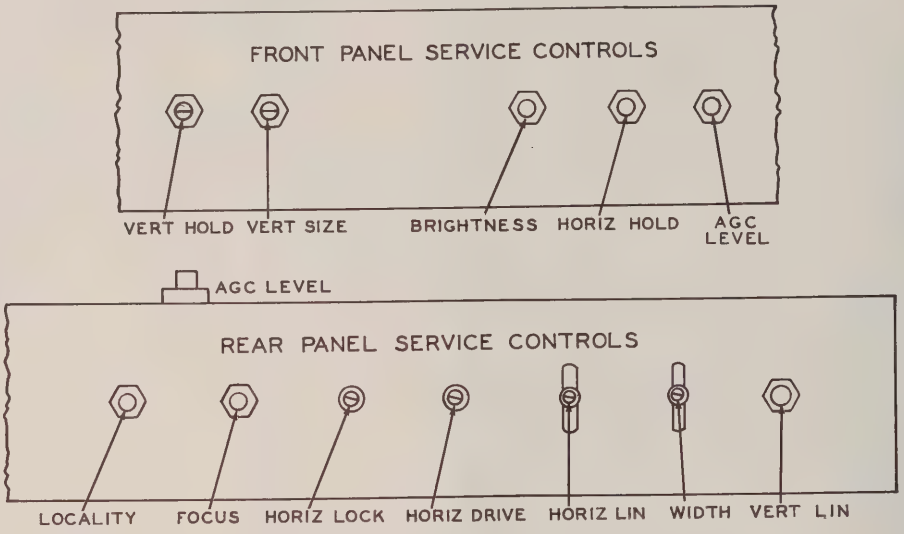
PICTURE TUBE SAFETY GLASS CLEANING

For picture tube safety glass cleaning, it is necessary to remove chassis. (See disassembly instructions).

PICTURE TUBE REMOVAL

For picture tube removal it is necessary to remove chassis. (See disassembly instructions).

SERVICE ADJUSTMENT LOCATION



SPECIAL ADJUSTMENTS

AGC LEVEL CONTROL

For average locations set the control clockwise a little past the point where snow in the picture disappears. In strong signal areas set control clockwise to point where strongest signal distorts or becomes unstable, then back up enough to give a stable undistorted picture.

In weak signal areas set control fully clockwise.

LOCALITY ADJUSTER

If picture shows sync instability not corrected by adjustment of the horizontal or vertical hold controls turn the locality adjuster to the point of most stable sync.

HORIZONTAL LOCK FIELD ADJUSTMENT

Adjustment of the Horiz. Oscillator Circuit can be made bfrom the rear panel of the chassis. Set the Horiz. Hold control at the mid-position of its range and adjust the Horiz. Lock slug until the picture synchronizes horizontally.

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate Sound IF detector buzz, adjust the Ratio Detector Secondary (L24) located on top of chassis. (See tube placement chart).

FUSES

Two fuses are used. One for Horiz. Sweep Circuit protection and one for LV Power Supply protection (for location, see tube placement chart).

CENTERING

Centering is accomplished mechanically by means of a centering lever on the PM focusing assembly. Adjust the centering lever from side to side, and up and down until the picture is properly centered.

DISASSEMBLY INSTRUCTIONS

① Remove 5 push on type control knobs from front panel.

② Remove 12 wood and 1 metal screws. Remove rear cover.

③ Disconnect speaker. Remove 4 speaker nuts. Remove speaker.

④ Disconnect built-in antenna. Loosen 2 wood screws. Remove antenna bracket.

⑤ Remove 5 chassis bolts. Remove chassis.

PHOTOFACT* Folder

SILVERTONE MODEL 3106 (Ch. 132.045, -1)

PROPERTY OF
L. F. B[illegible] N.Y.C.P
[illegible] MAIN ST.
DENVER, COLORADO

IMPORTANT FILING NOTICE

The contents for this envelope will be found among the last folders in this complete set of folders . . . *unless* it has been purchased as part of a *complete* volume of PHOTOFACTS assembled in a DeLuxe Binder.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.

MODEL 3106

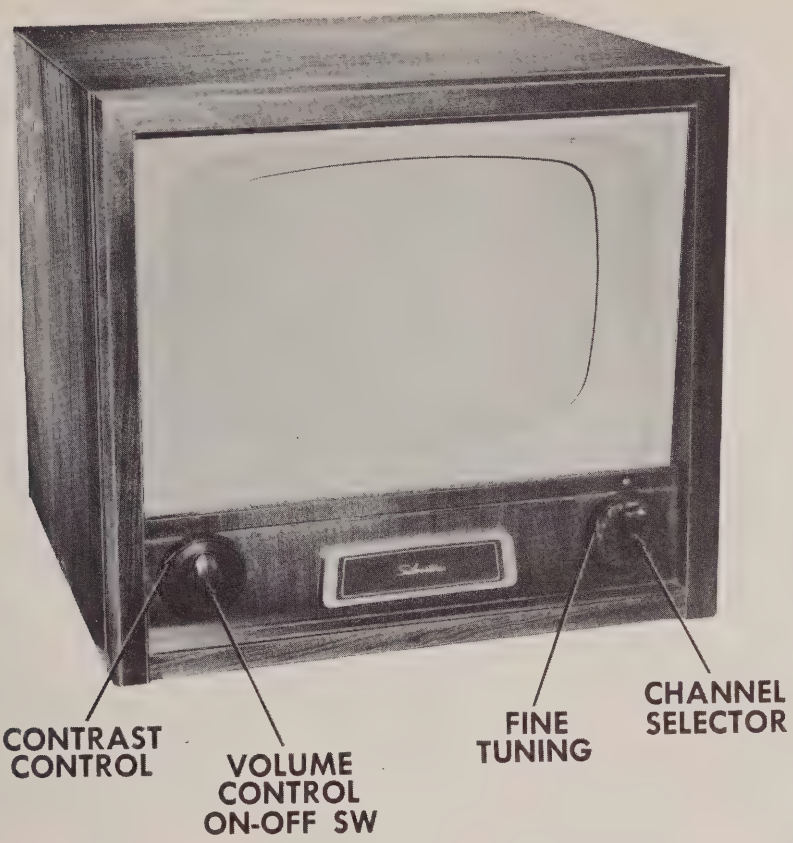
SILVERTONE MODEL
3106 (Ch. 132.045, -1)

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

DATE 4–53 SET 199 FOLDER 11

SILVERTONE MODEL 3106 (Ch. 132.045, -1)



SILVERTONE MODEL 3106 (Ch. 132.045, -1)

TRADE NAME	Silvertone Model 3106 (Ch. 132.045, -1)
SUPPLIER	Sears Roebuck & Co., 925 So. Homan, Chicago, Ill.
TYPE SET	Television Receiver
TUBES	Twenty-four
POWER SUPPLY	110-120 Volts AC 60 Cycles RATING 1.9 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)

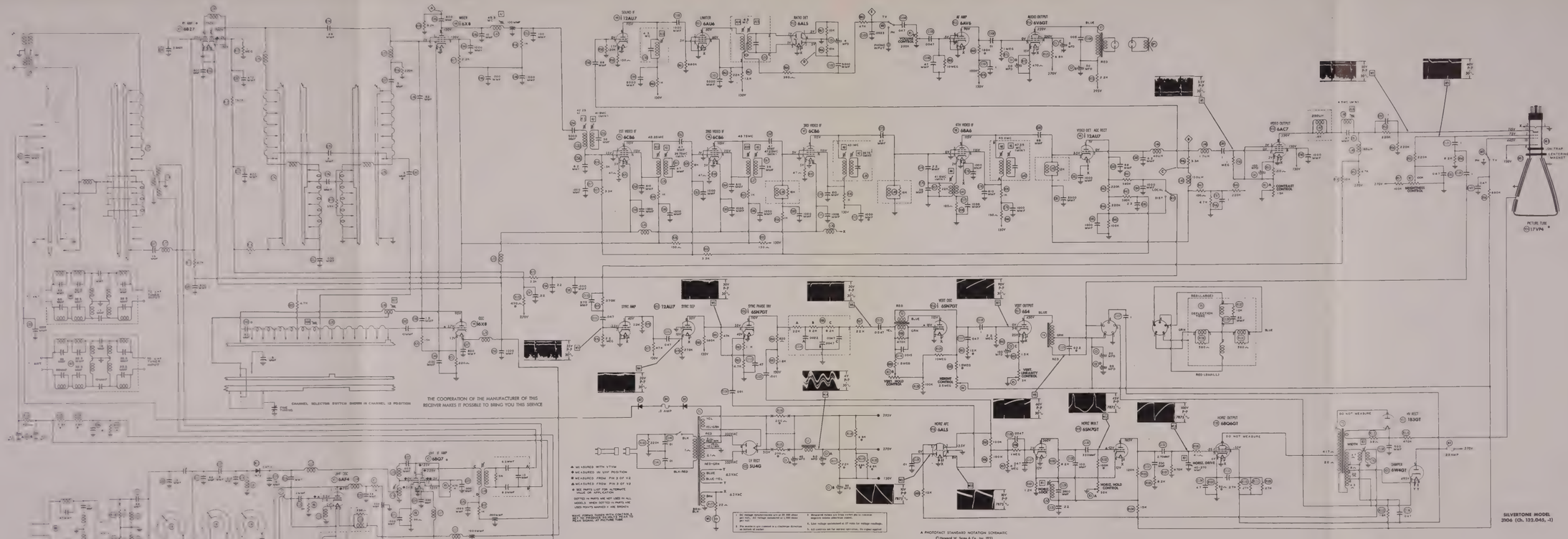
INDEX

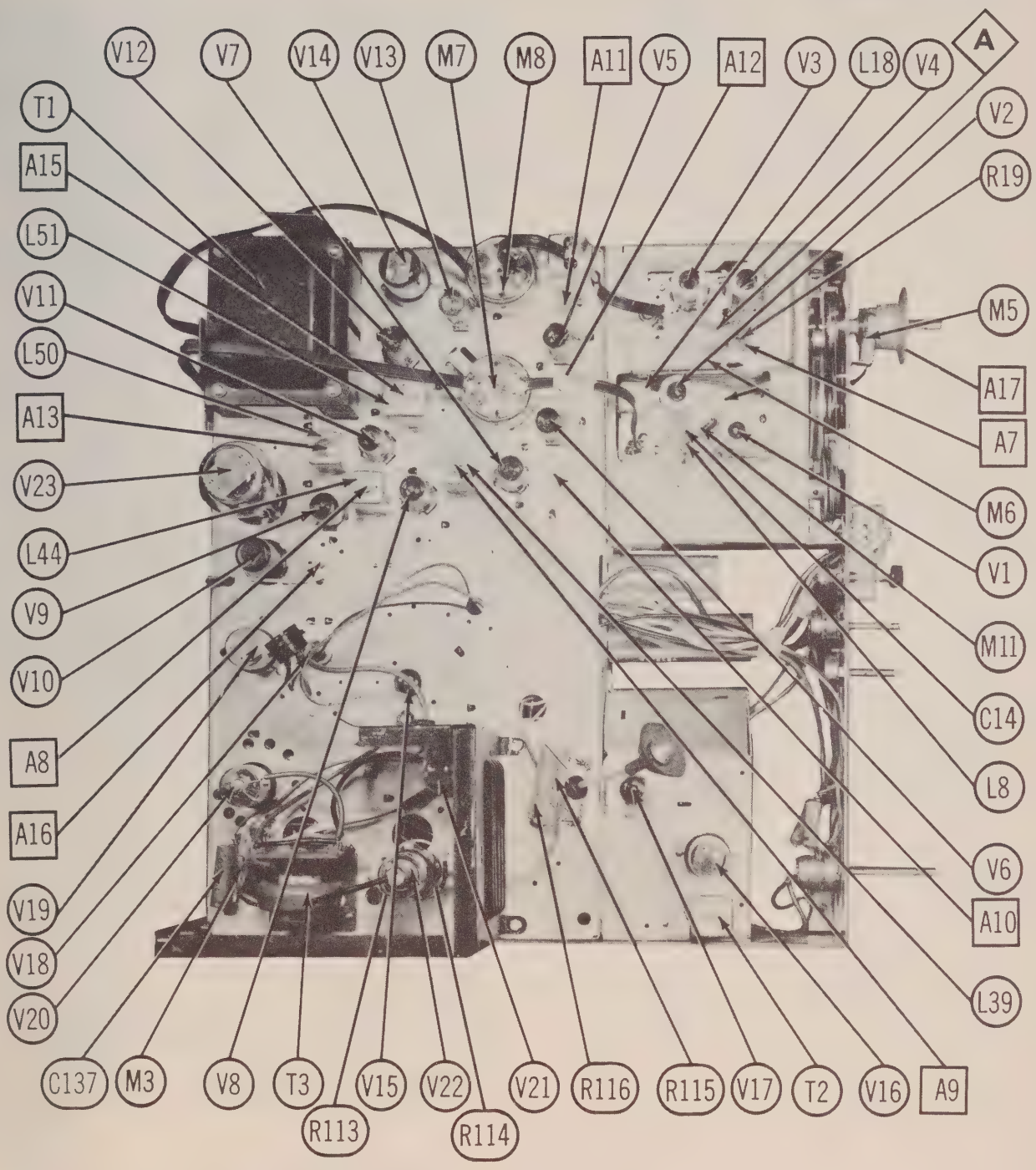
Alignment Instructions 6, 7
Drive Cord Stringing 18
Disassembly Instructions 19
Horizontal Sweep Circuit Adjustments 11
Parts List and Descriptions ..... 13 thru 16
Photographs
- Cabinet - Rear View 11
- Capacitor and Alignment Identification 4, 9
- Chassis - Top View 3
- RF Tuner UHF 18
- RF Tuner VHF 10
- Resistor and Inductor Identification 12, 17

Resistance Measurements 8
Schematic Alternate Tuner 20
Schematic TV 2
Servicing in the Field 19
Tube Failure Check Chart 5
Tube Placement Chart (Bottom View) 8
Tube Placement Chart (Top View) 5

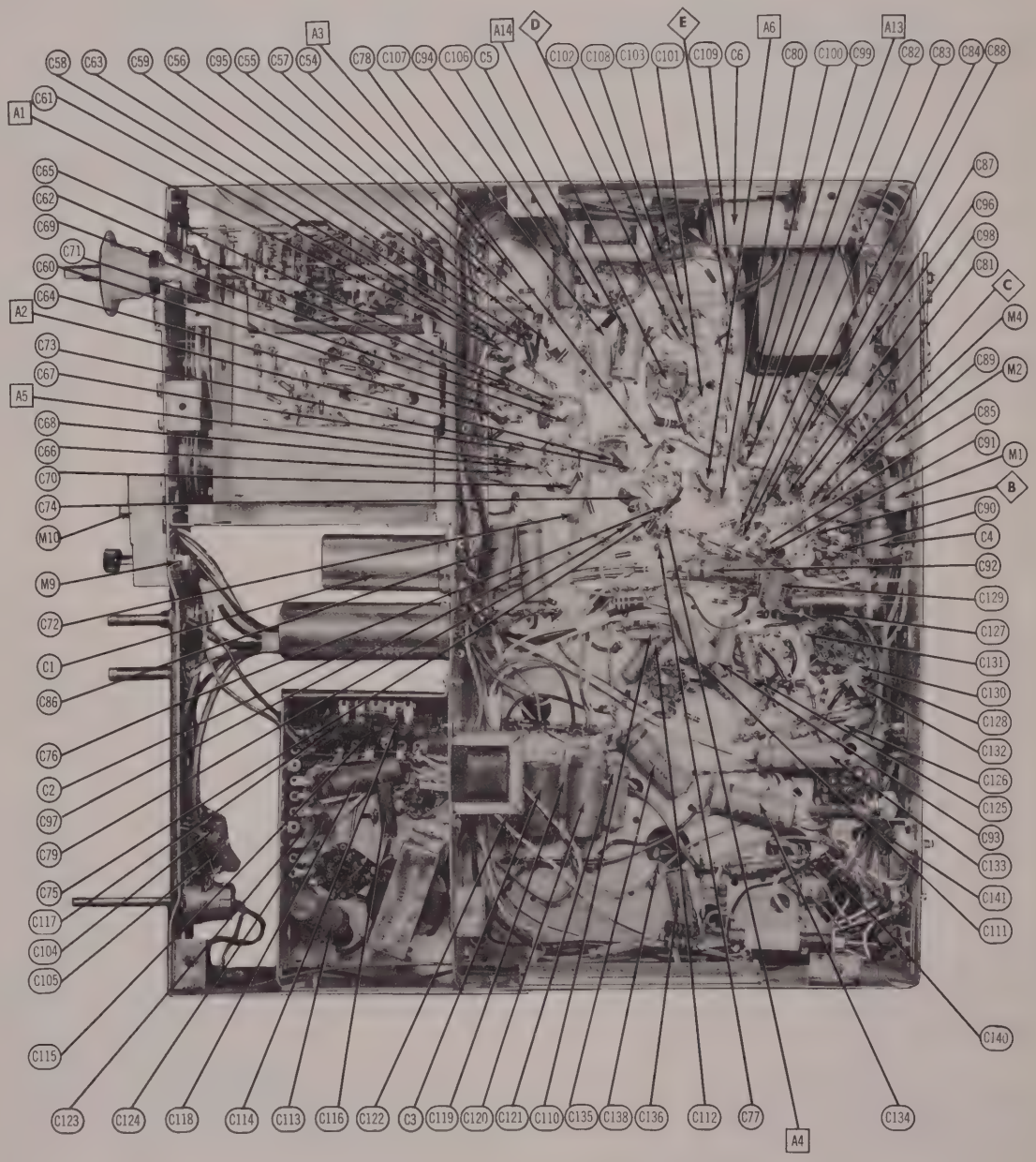
HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America


THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
CHANNEL SELECTOR SWITCH SHOWN IN CHANNEL 13 POSITION
SILVERTONE MODEL 3906 (Ch. 132.045, -1)
A PHOTOFACT STANDARD NOTATION SCHEMATIC
©Howard W. Sams & Co., Inc. 1953



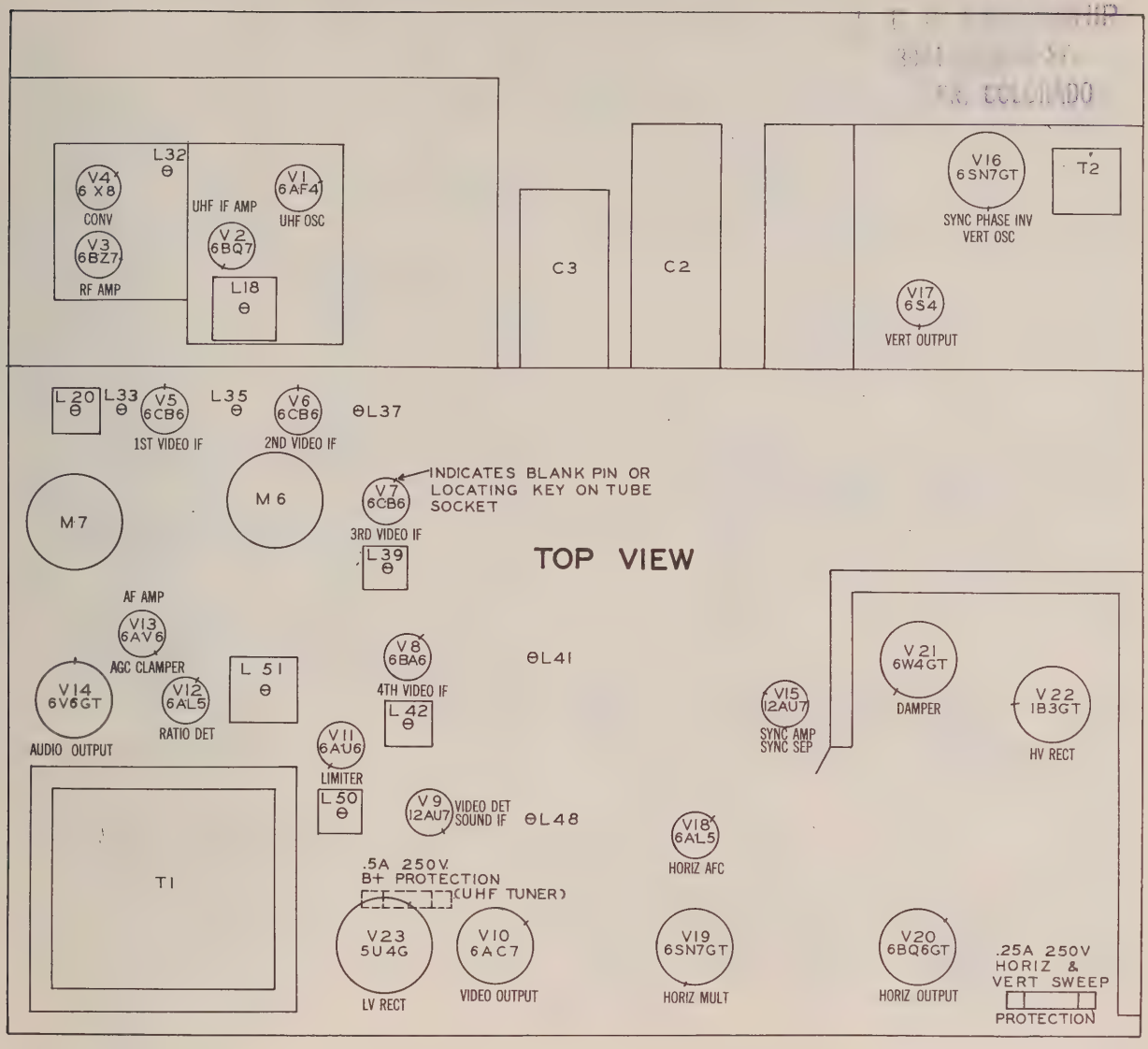
CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

PROPERTY OF

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms.
Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound - V23

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - V4, V5, V6, V7, V8, V9 (V1, Selenium Rectifiers (M1, M2), Fuse(M4)-UHF only.)
No pic, no sound, has snow- V3, V4, V5
No pic, has sound, has raster - V10, V24
Has pic, no sound - V9, V11, V12, V13, V14
Overloaded picture - V9

SYNC FAILURE
No vert. sync - V16
No horiz. sync - V16, V18, V19
No horiz. or vert. sync - V15, V16

SWEEP FAILURE
No raster, has sound - V19, V20, V21, V22, V24 , Fuse (M3)
No vertical deflection - V16, V17
Poor vert. linearity or foldover - V16, V17
Poor horiz. linearity or foldover - V19, V20, V21
Narrow Picture - V19, V20, V21, V22, V23
Vert. off freq. - V16
Horiz. off freq. - V16, V18, V19

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage lead should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator tube to disable the high voltage.

VIDEO IF ALIGNMENT

Connect the negative lead of a 3 volt battery to the junction of R42 and R44. Connect the positive lead to chassis.
Set the Local-Distance switch to "Local" position.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	.01MFD	High side to tuner test point ◇A◇. Low side to chassis.	39.75MC (Unmod.)	Any non-interfering channel	DC probe to point ◇B◇. Common to point ◇C◇.	A1, A2	Adjust for MINIMUM deflection.
2.	"	"	41.6MC	"	"	A3, A4	"
3.	"	"	47.25MC	"	"	A5, A6	"
4.	"	"	45.3MC	"	"	A7	Preset core to maximum clockwise position. Adjust for maximum deflection.
5.	"	"	45.0MC	"	"	A8	Adjust for maximum deflection.
6.	"	"	43.1MC	"	"	A9	"
7.	"	"	45.75MC	"	"	A10	"
8.	"	"	42.25MC	"	"	A11, A12	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	.01MFD	High side to tuner test point ◇A◇ Low side to chassis.	44MC (10MC Swp)	41.6MC 42.25MC 42.75MC 45.0MC 45.75MC	Any non-interfering channel.	Vert. amp to point ◇B◇ Low side to chassis.		Check for response curve similar to Fig. 1 with markers as shown. If necessary, retouch A7 through A12 for desired response.
10.	"	"	44MC	41.6MC 42.25MC	"	"		Increase scope gain and decrease sweep width to obtain expanded trace of low frequency end of response curve. If necessary retouch A4 for double humped curve as in Fig .2.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
11.	.01MFD	High side to point ◇B◇. Low side to chassis.	4.5MC (Unmod.)	Any non-interfering channel	DC probe to point ◇D◇. Common to chassis.	A13, A14	Adjust for maximum deflection.
12.	"	"	"	"	DC probe to point ◇E◇. Common to chassis.	A15	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
11.	.01MFD	High side to point ◇B◇ Low side to chassis.	4.5MC 450KC Swp)	4.5MC	Any non-interfering channel.	Vert. amp to point ◇D◇ Low side to chassis.	A13, A14	Disconnecr stabilizer capaciotr C5. Adjust for curve of maximum amplitude and symmetry as in Fig. 3.
12.	"	"	"	"	"	Vert. amp. to point ◇E◇ Low side to chassis.	A15	Reconnect capacitor C5. Adjust so that 4.5MC occurs at center of crossover lines as in Fig. 4. SLIGHTLY retouch A14 for maximum amplitude and straightness of crossover lines.

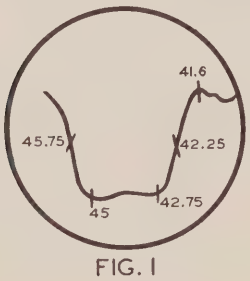


FIG. 1

FIG. 2

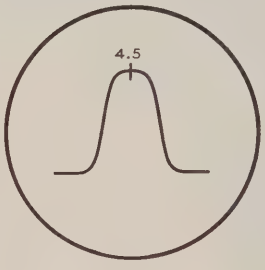


FIG. 3

ALIGNMENT INSTRUCTIONS (CONT.)

4.5MC TRAP ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
13.	.01MFD	High side to point Ⓑ. Low side to chassis.	4.5MC (Unmod.)	Any non-interfering channel	DC probe thru detector (Fig. 5) to pin 11 of picture tube. Common to chassis.	A16	Adjust for MINIMUM deflection.

PROPERTY OF

VHF OSCILLATOR ALIGNMENT

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection. The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms. Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
14.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	215.75MC	13	Vert. Amp. to point Ⓑ. Low side to chassis.	A17	Adjust to place sound marker in notch on low frequency side of response curve as in Fig. 6.
15.	"	"	207MC (10MC Swp)	209.75MC	12	"		Check for sound marker placement as in Fig. 6. If necessary make compromise adjustment of A17 for any individual channel, then check all other high band channels to see that they have not been seriously affected.
			201MC (10MC Swp)	203.75MC	11			
			195MC (10MC Swp)	197.75MC	10			
			189MC (10MC Swp)	191.75MC	9			
			183MC (10MC Swp)	185.75MC	8			
			177MC (10MC Swp)	179.75MC	7			
16.	"	"	85MC (10MC Swp)	87.75MC	6	"	A18	Adjust to place sound marker in notch on low frequency side of response curve as in Fig. 6.
17.	"	"	79MC (10MC Swp)	81.75MC	5	"		Check for sound marker placement as in Fig. 6. If necessary make compromise adjustment of A18 for any individual channel then check all other low band channels to see that they have not been seriously affected.
			69MC (10MC Swp)	71.75MC	4			
			63MC (10MC Swp)	65.75MC	3			
			57MC (10MC Swp)	59.75MC	2			

THE RF AND MIXER PORTIONS OF THE VHF TUNER AND ALL OF THE UHF TUNER HAVE BEEN PROPERLY ALIGNED AT THE FACTORY AND ARE VERY STABLE, ALIGNMENT OF THESE PORTIONS SHOULD NOT BE REQUIRED IN THE FIELD.

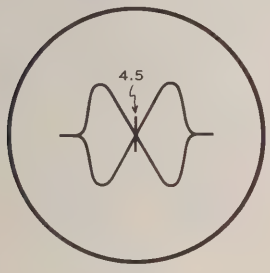


FIG. 4

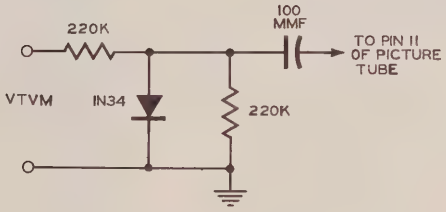


FIG. 5

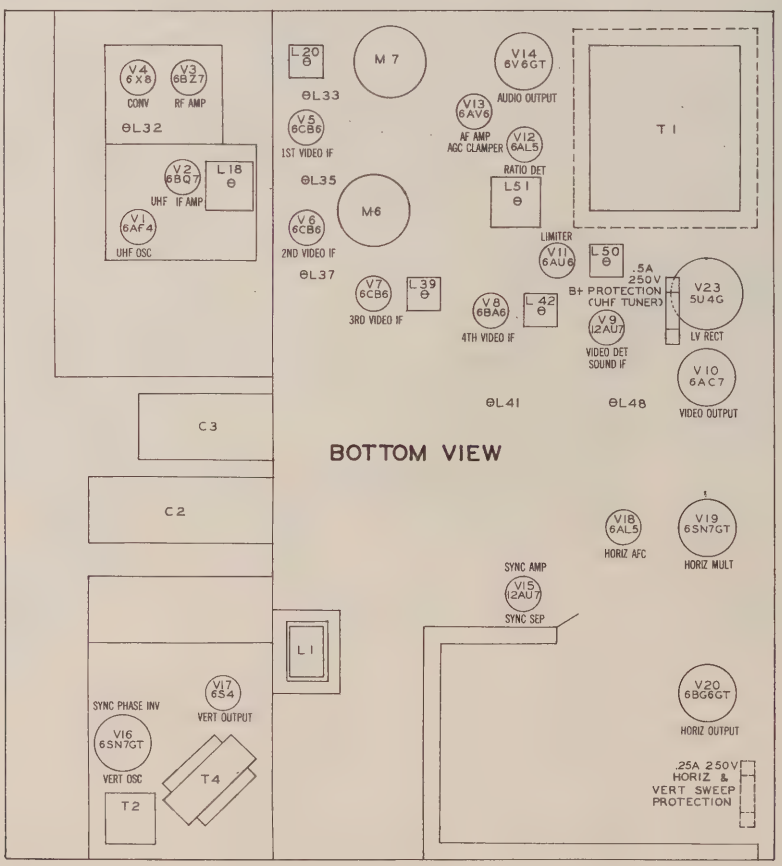
FIG. 6

SILVERTONE MODEL 3106 (Ch. 132.045, -1)

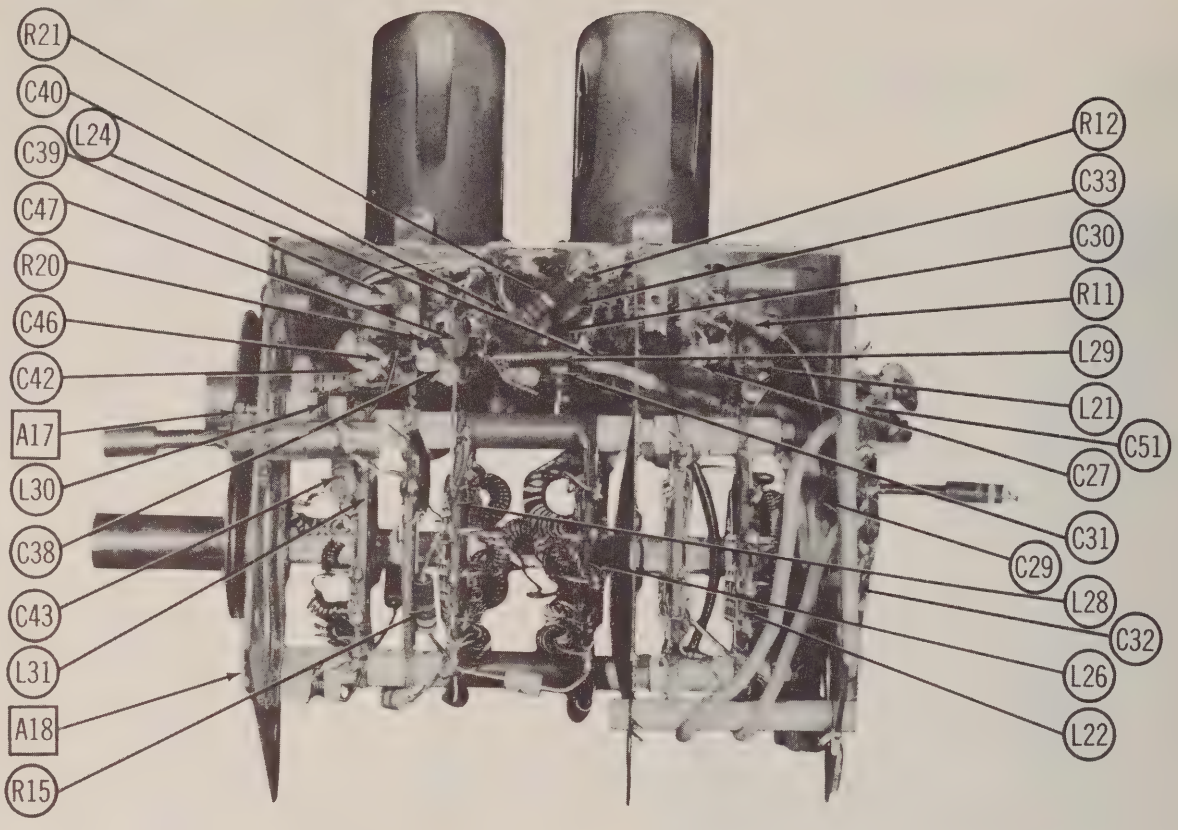
RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	♦ 6AF4	■9.5KΩ	10KΩ	.1Ω	0Ω	0Ω	10KΩ	■9.5KΩ		
V 2	♦ 6BQ7	■1.8KΩ	INF	INF	0Ω	.1Ω	INF	0Ω	100Ω	0Ω
V 3	6BZ7	† 1.2KΩ	† 430KΩ	INF	.1Ω	0Ω	INF	1Meg	0Ω	0Ω
V 4	6X8	0Ω	15KΩ	† 7KΩ	0Ω	.1Ω	220Ω	220KΩ	† 4.5KΩ	† 3KΩ
V 5	6CB6	900KΩ	47Ω	0Ω	.1Ω	† 3.2KΩ	† 3.2KΩ	0Ω		
V 6	6CB6	900KΩ	47Ω	.1Ω	0Ω	† 3.1KΩ	† 3.1KΩ	0Ω		
V 7	6CB6	900KΩ	47Ω	0Ω	.1Ω	† 3KΩ	† 3KΩ	0Ω		
V 8	6BA6	1.8Ω	0Ω	.1Ω	0Ω	† 3KΩ	† 3KΩ	120Ω		
V 9	12AU7	550KΩ	8KΩ	4.8KΩ	.1Ω	.1Ω	† 3KΩ	120KΩ	150Ω	0Ω
V 10	6AC7	0Ω	0Ω	30Ω	1Meg	180Ω	†1.9KΩ	.1Ω	† 5KΩ	
V 11	6AU6	680KΩ	0Ω	.1Ω	0Ω	† 14KΩ	† 14KΩ	0Ω		
V 12	6AL5	10KΩ	10KΩ	0Ω	.1Ω	INF	0Ω	INF		
V 13	6AV6	10Meg	0Ω	0Ω	.1Ω	0Ω	0Ω	† 250KΩ		
V 14	6V6GT	INF	.1Ω	2.6KΩ	7KΩ	1Meg	INF	0Ω	470Ω	
V 15	12AU7	† 25KΩ	2.2Meg	0Ω	.1Ω	.1Ω	† 65KΩ	0Ω	270KΩ	0Ω
V 16	6SN7GT	2.5Meg	#1.8Meg	0Ω	† 65KΩ	† 4.5KΩ	5.8KΩ	.1Ω	0Ω	
V 17	6S4	INF	2KΩ	2.2Meg	.1Ω	0Ω	2.2Meg	INF	INF	#3.4KΩ
V 18	6AL5	4.8Meg	4.8Meg	.1Ω	0Ω	12KΩ	0Ω	12KΩ		
V 19	6SN7GT	5.7Meg	#25KΩ	1.2KΩ	110KΩ	#135KΩ	1.2KΩ	0Ω	.1Ω	
V 20	6BQ6GT	INF	0Ω	INF	† 9KΩ	470KΩ	INF	.1Ω	50Ω	TOP CAP #20Ω
V 21	6W4GT	INF	INF	10Meg	INF	† 225Ω	INF	#24Ω	#24Ω	
V 22	1B3GT	PINS 1 TO 8 HAVE INF RESISTANCE								TOP CAP #435Ω
V 23	5U4G	INF	18KΩ	INF	20Ω	#680KΩ	21Ω	INF	18KΩ	
V 24	17VP4	0Ω	† 225KΩ	PIN 6 † 1.9KΩ	PIN 10 #680KΩ	PIN 11 † 115KΩ	PIN 12 .1Ω			

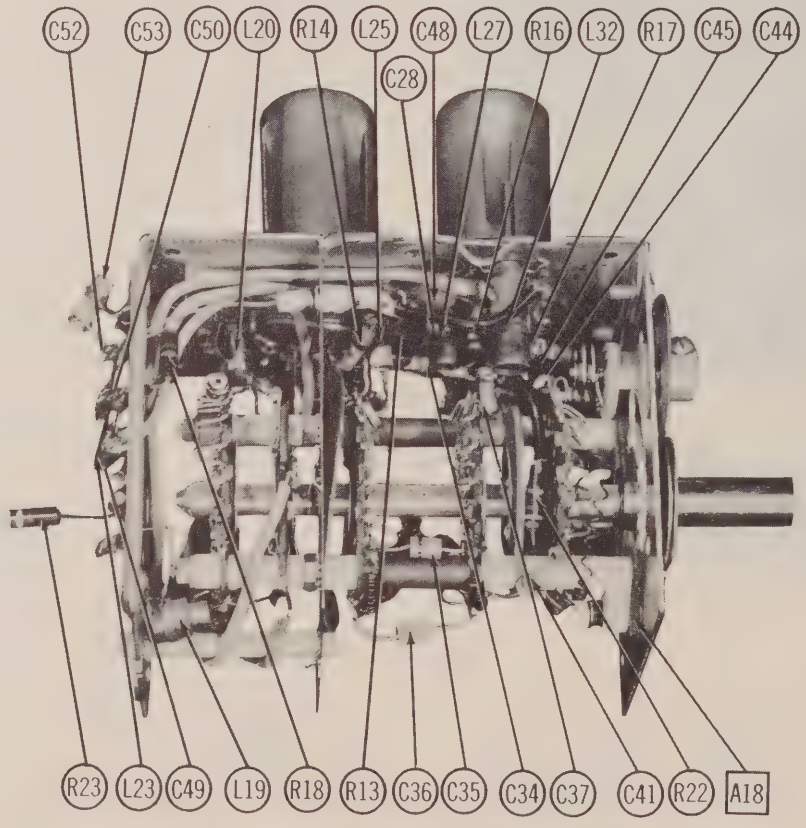
ALL MEASUREMENTS TAKEN IN VHF POSITION UNLESS OTHERWISE SPECIFIED.
♦ MEASURED IN UHF POSITION.
† MEASURED FROM PIN 8 OF V23.
# MEASURED FROM PIN 3 OF V21.
■ MEASURED FROM OUTPUT OF M2.



TUBE PLACEMENT CHART

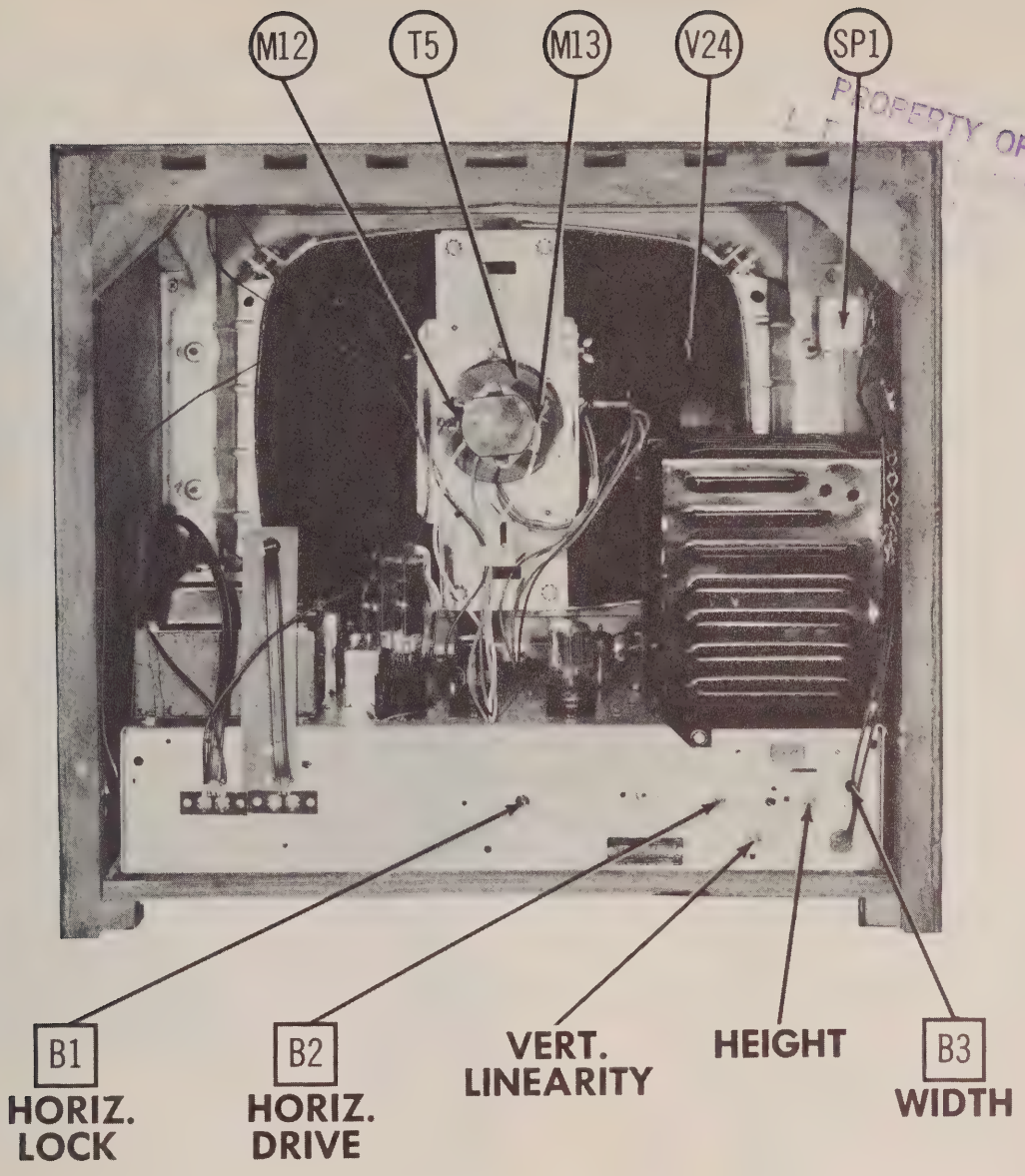


VHF TUNER - RIGHT SIDE



VHF TUNER - LEFT SIDE

PROPERTY OF



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

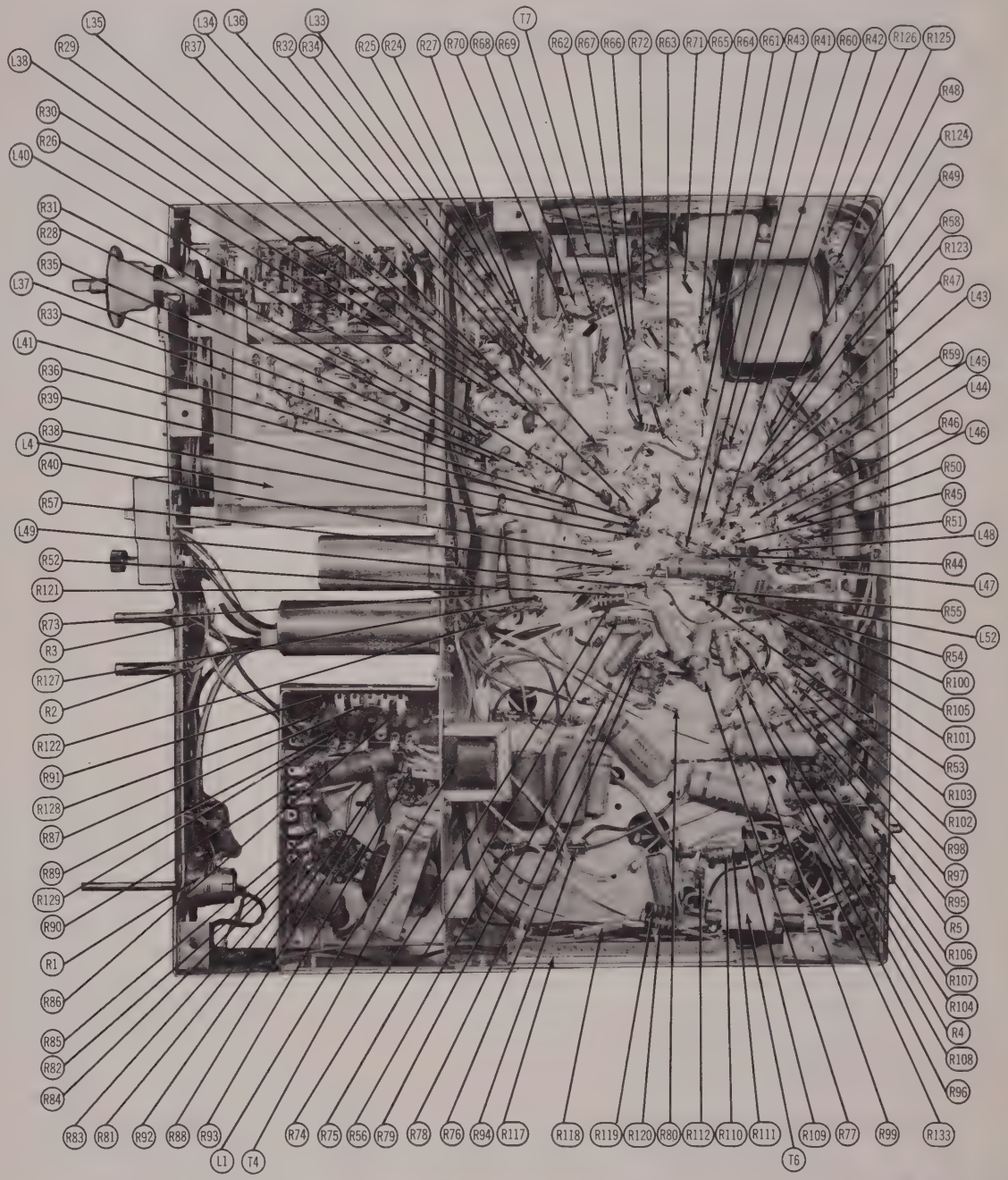
Turn the set on and tune in a TV station, preferably a test pattern.

Set the horizontal hold control 90 degrees from full clockwise position. Adjust the horizontal lock slug (B1) until the picture synchronizes horizontally.

Turn B1 clockwise until the picture loses sync, then counter clockwise until the picture just falls into sync. Momentarily switch to another channel and back, first, with the horizontal hold at one extreme of rotation, then at the other extreme. Picture should lose sync at both extremes. If necessary, make slight readjustment of B1 to center the sync range of the horizontal hold control.

Adjust the horizontal drive trimmer (B2) counter clockwise as far as possible without the presence of a vertical white line or compression of the center of the picture.

Adjust the width slug (B3) for a picture slightly wider than necessary to fill the picture mask horizontally.



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: Silvertone PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	NOTES
V1	UHF Oscillator	6AF4	6AF4	7DK	
V2A	UHF IF Amp.	6BQ7	6BQ7	9AJ	
B	UHF IF Amp.	6BZ7	6BZ7	9AJ	
V3	RF Amplifier	6BZ7	6BZ7	9AJ	
V4	Converter	6X8	6X8	9AK	
V5	1st. Video IF Amp.	6CB6	6CB6	7CM	
V6	2nd. Video IF Amp.	6CB6	6CB6	7CM	
V7	3rd. Video IF Amp.	6CB6	6CB6	7CM	
V8	4th. Video IF Amp.	6BA6	6BA6	7BK	
V9	Video Det. -AGC Rect. -Sound IF Amp.	12AU7	12AU7	9A	
V10	Video Output	6AC7	6AC7	8N	
V11	Limiter	6AU6	6AU6	7BK	
V12	Ratio Detector	6AL5	6AL5	6BT	
V13	AF Amplifier-AGC Clamper	6AV6	6AV6	7BT	
V14	Audio Output	6V6GT	6V6GT	7S	
V15	Sync Amplifier - Sync Separator	12AU7	12AU7	9A	
V16	Sync Phase Inv.-Vert. Oscillator	6SN7GT	6SN7GT	8BD	
V17	Vert. Output	6S4	6S4	9AC	
V18	Horiz. AFC	6AL5	6AL5	6BT	
V19	Horiz. Mult.	6SN7GT	6SN7GT	8BD	
V20	Horiz. Output	6BQ6GT	6BQ6GT	6AM	
V21	Damper	6W4GT	6W4GT	4CG	
V22	HV Rectifier	1B3GT	1B3GT	3C	
V23	LV Rectifier	5U4G	5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: Silvertone PART No.	REPLACEMENT DATA: SYLVANIA PART No.		RTMA BASE TYPE	NOTES
V24	17VP4	17VP4 17LP4		12C 12C	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA: Silvertone PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	■60	400	N22422-13	AFH4-88				FP431, 4	TVL-4709	
B	▲50	350		PRS450/40				TC62		
C	▲5	450								
D	20	25								
C2A	■80	350	N22422-14	AFH3-182		C037		FP420, 6	TVL-4711	
B	▲50	350		PRS450/20		BRH501		TC75		
C	100	50								
D	▲20	450								
C3	20	450	N25452	PRS450/20		BR2045A		TC75	TVA-1709	
C4	100	25	N25454	PRS25/100		BRH251A		TC2501	TVA-1207	
C5	4	150	N25453	PRS150/4		BR415		TC40	TVA-1402	
C6A	■40	300	N22422-15	AFH2-57		XB013		FP238	TVL-2575	
B	▲30	300								
C7	.68				TCZ-.68		NP0K-R68			
C8	.68				TCZ-.68		NP0K-R68			
C9	.4-3									
C10	1				TCZ-1		NP0K-010			
C11	.82									
C12	1.8									
C13	.4-3									
C14	2.2				TCZ-2.2		NP0K-2R2		5TCCB-V22	
C15	1				TCZ-1		NP0K-010			
C16	1.1									
C17	12									
C18	6									
C19	.5-3				829-3			CT565A		
C20	68			SI68	D6-680		GP1K-680	UC-5468	5GA-Q68	
C21	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C22	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C23	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C24	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C25	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C26	68			SI68	D6-680		GP1K-680	UC-5468	5GA-Q68	
C27	15			SI15	D6-150		GP1K-150	UC-5415	5GA-Q15	
C28	3									
C29	800			BPD-0008	DD-801	TM5T8	GP1K-001	DC-521	5HK-D1	
C30	470			BPD-00047	D6-471		GP2K-471	UC-5347	5GA-T47	
C31	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C32	800			BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	
C33	800			BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	
C34	.39									
C35	.3									
C36	1				TCZ-1		NP0K-010			
C37	15			SI15	D6-150		GP1K-150	UC-5415	5GA-Q15	
C38	.82						N330K-1R5			
C39	1.5						801-001	DC-521	5HK-D1	
C40	1000			BPD-001	DD-102	TM5D1	NP0K-1R5	ZT-5515	5TCCB-V15	Note 1.
C41	1.5			SI1.5NP0	TCZ-1.5		N750K-100	NT-541	5TCU-Q1	Note 2.
C42	10			SI10N750	TCN-10					
C43	.82									
C44	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C45	800			BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	
C46	10			SI10NP0	TCZ-10		NP0K-100	ZT-541	5TCC-Q1	
C47	800			BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	
C48	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C49	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C50	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	

CAPACITORS (CONT.)

ITEM No.	RATING CAP	RATING VOLT	REPLACEMENT DATA Silvertone PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C52	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C53	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C53	180			S1100	[illegible]	TM5T1	GP1K-101	UC-531	5GA-T1	
C54	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C55	36									
C56	8.2						NP0K-8R2			
C57	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C58	810									
C59	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C60	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C61	47									
C63	47									
C63	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C64	810									
C65	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C66	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C67	39									
C68	47									
C69	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C70	810									
C71	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C72	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	Note 3.
C73	47									
C74	8.2									
C75	36									
C76	810									
C77	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C78	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C79	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C80	56									
C81	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C82	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C83	68			D6-680	5W5Q7	GP1K-680	UC-5468		5GA-Q68	
C84	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C85	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C86	.22	200		P488-22				PT4025	2TM-P22	
C87	.1	200		P388-1	DF-104	PJ2P1		PT401	2TM-P1	
C88	8.2						NP0K-8R2			
C89	.1	200		P388-1	DF-104	PJ2P1		PT401	2TM-P1	
C90	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C91	47			S47NP0	TCZ-47		NP0K-470	ZT-5447	5TCC-Q47	
C92	.1	400		P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C93	.047	400		P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C94	.22	200		P488-22		PTE4P22		PT4025	2TM-P22	
C95	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C96	.1	400		P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C97	.22	400		P488-22		PTE4P22		PT4025	4TM-P22	Note 5.
C98	68			S268	D6-680	5W5Q7	GP1K-680	UC-5468	5GA-Q68	
C99	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C100	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C101	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C102	500	500		1468-0005	D6-501	5W5T5	GP2K-501	MC245	1FM-35	
C103	.0033	600		P588-0033	D6-332	PTE6D33	GP2-333-332	TP6233	6TM-D3	
C104	.047	200		P288-047	DF-503	PTE4S47		PT4147	2TM-S47	
C105	.0047	600		P588-0047	D6-472	PTE6D47	GP2-333-472	TP6247	6TM-D47	
C106	47	500		1468-00005	D6-470	5W5Q5	GP1K-470	MC225	1FM-45	
C107	.1	400		P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C108	.01	500		P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C109	.005	500		P488-005	D6-502	PTE5D5	GP2-333-502	PT625	6TM-D5	
C110	270	500		1469-0003		5R5T3		MCB241	MS-33	
C111	.047	400		P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C113	.047	400		P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C113	.47	200		P288-47		PTE4P47		PT405	2TM-P47	
C114A	.0033		P588-0022			PTE6D22		PT6222		
B	.0047		P588-0047	◆PC-100		PTE6D47	◆1405-01	PT6247	◆101C1	
C	.0047		P588-0047			PTE6D47		PT6247		
C115	.0047	600								
C116	.0015	500		P688-0015	D6-152	PTE6D15	GP2L-152	PT6215	6TM-D15	
C117	.047	500		P588-047		PTE6S47		PT6147	6TM-S47	
C118	.1	500		P588-1	DF-104	PTE6P1		PT601	6TM-P1	
C119	.022	500		P588-022		PTE6S22		PT6223	6TM-S22	Note 4.
C120	.1	1000		P1088-1		PTE1EP1		PT1601	MB-P1	
C121	.1	400		P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C122	.047	600		P588-047	DF-503	PTE6S47		PT6147	6TM-S47	
C123	.001	600		P588-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	
C124	.001	500		P588-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	
C125	.01	400		P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C126	.0047	400		P488-0047	D6-472	PTE4D47	GP2-333-472	TP6247	6TM-D47	
C127	.047	400		P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C128	100	500		1469-0001		5R5T1		MCB235	MS-31	
C129	3900	500		1464-004		1DR5D4		MCB463	MS-24	
C130	330	500		1469-00035						
C131	330	500		1469-00035						
C132	270	500		1469-0003		5R5T3			MS-33	
C133	.1	400		P588-1	DF-104	PTE6P1		PT601	6TM-P1	
C134	.47	200		P588-47		PTE4P47		PT405	2TM-P47	
C135	.22	600		684-25		PTE6P25		PT6025	6TM-P25	
C136	.047	600		P588-047		PTE6S47		PT6147	6TM-S47	
C137	.1	400		P488-1	DF-104	PTE4P1		PT401	4TM-S1	
C138	500	30000		HV30C	TV3-502	MM-C20T5	413-501		20DK-T5	
C139	82	3000								
C140	.01	600		689ZGXY-01		PJ68I		PT611	6TM-S1	
C141	.01	600		689ZGXY-01		PJ68I		PT611	6TM-S1	

Note 1: Some models use .82MMF in this application.
Note 2: Some models use 1.5MMF in this application.
Note 3: Not used in all models
◆ Items C114A, C114B, C114C, R86A, R86B and R86C are combined in one unit.
Note 4: Chassis 132.045 uses .033MFD in this application
Note 5: Not used in Chassis 132.045.

CONTROLS

ITEM No	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA Silvertone PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1500Ω	½	N22464-27	QJ-349 *	RTV-352		UF152L	Contrast-Panel-Note 1
B	250KΩ	½					UR254A	Volume-Rear
C	Switch						US-26	Attach to R1A
R2A	100KΩ	½	N22464-40	QU-128	AG-49-S	AB-40	U-41	Brightness
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R2A
R3A	50KΩ	½	N22464-42	QJ-426 **			UF54L	Horiz. Hold-Panel-Note 2
B	2.5Meg	½					UR26L	Vert. Hold-Rear
R4A	2.5Meg	½	N22464-43	QU-239	AG-84-S	AB-83	SU-565	Height
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R4A
R5A	3000Ω	½	N22464-41	QU-112	AG-15-S	AB-8	U-8	Vert. Linearity
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R5A

* CONCENTRIKIT EQUIVALENT - KIT K-2, BASE ELEMENTS & SHAFTS B17-110 & P1-204 (Panel)
B13-130 & R1-220 (Rear) & SWITCH 78-1
† Universal replacement (Mallory exact duplicate part #UE1338)
Note 1. Chassis #132.045 uses alternate part #N22464-49)
Note 2. Early production Models use 25KΩ - Horiz. Hold, 1.5Meg - Vert. Hold
** CONCENTRIKIT EQUIVALENT KIT K-2 BASE ELEMENTS & SHAFTS, B11-123 & P9-112 (Panel), B11-239 & R12-122 (Rear)

RESISTORS

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA Silvertone PART No.	IRC PART No.	NOTES
R6	10KΩ	½			
R7	1000Ω	½		BTS-1000	
R8	100Ω	½		BTS-100	
R9	470KΩ	½		BTS-470K	
R10	1000Ω	½		BTS-1000	
R11	4700Ω	½		BTS-4700	
R12	1Meg 5%	½			
R13	750KΩ 5%	½			
R14	1000Ω	½		BTS-1000	
R15	3900Ω	½		BTS-3900	
R16	220KΩ	½			
R17	2200Ω	½		BTS-2200	
R18	1000Ω	½		BTS-1000	
R19	8200Ω	½			
R20	15KΩ	½			
R21	220Ω	½		BTS-220	
R22	4700Ω	½		BTS-4700	
R23	3300Ω	½		BTS-3300	
R24	15KΩ	½			
R25	47Ω	½			
R26	1000Ω	½		BTS-1000	
R27	3300Ω	½		BTS-3300	
R28	150Ω	½		BTS-150	
R29	18KΩ 5%	½			
R30	47Ω	½			
R31	1000Ω	½		BTS-1000	
R32	3300Ω	½		BTS-3300	
R33	150Ω	½		BTS-150	
R34	1000Ω	½		BTS-1000	
R35	47Ω	½			
R36	1000Ω	½		BTS-1000	
R37	220KΩ	½			
R38	120Ω	½		BTS-120	
R39	1000Ω	½		BTS-1000	
R40	150Ω	½		BTS-150	
R41	560KΩ	½		BTS-560K	
R42	220KΩ	½		BTS-220K	
R43	560KΩ	½		BTS-560K	
R44	220KΩ	½		BTS-220K	
R45	100KΩ	½		BTS-100K	
R46	3300Ω 5%	½		BTS-3300 5%	
R47	100Ω	½			
R48	4700Ω	½		BTS-4700	
R49	220KΩ	½		BTS-220K	
R50	1Meg	½		BTS-1Meg	
R51	150Ω	½		BTS-150	
R52	4700Ω 5%	2		BTB-4700 5%	Note 2
R53	220KΩ	½		BTS-220K	Note 2
R54	220KΩ	½		BTS-220K	
R55	220KΩ	½		BTS-220K	
R56	680KΩ	½		BTS-680K	
R57	100KΩ	½		BTS-100K	
R58	120KΩ	½			Note 10
R59	150Ω	½		BTS-150	Note 5
R60	1000Ω	½		BTS-1000	
R61	680KΩ	½		BTS-680K	
R62	12KΩ	½		BTA-12K	
R63	22KΩ	1		BTA-22K	
R64	390Ω 5%	½		BTS-390 5%	
R65	47KΩ	½		BTS-47K	
R66	10KΩ 5%	½		BTS-10K 5%	
R67	10KΩ 5%	½		BTS-10K 5%	
R68	10Meg	½		BTS-10Meg	
R69	180KΩ 5%	1		BTA-150K 5%	Note 1
R70	100KΩ	½		BTS-100K	
R71	1Meg	½		BTS-1Meg	
R72	470Ω	1		BTA-470	

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA Silvertone PART No.	IRC PART No.	NOTES
R73	2200Ω	2		BTB-2200	
R74	10KΩ	½		BTS-10K	
R75	270KΩ	½		BTS-270K	
R76	2.2Meg	1		BTS-2.2Meg	
R77	47KΩ	½		BTA-47K	
R78	22KΩ	½		BTS-22K	
R79	270KΩ	½		BTS-270K	
R80	560KΩ	½		BTS-560K	
R81	47KΩ	½		BTS-47K	
R82	1000Ω 5%	½		BTS-1000 5%	
R83	4700Ω	½		BTS-4700	
R84	820Ω	½		BTS-820	
R85	1800Ω	½		BTS-1800	
R86A	22KΩ	½		BTS-22K	
B	8200Ω	½	◆N24186	BTS-8200	
C	8200Ω	½		BTS-8200	
R87	22KΩ	½		BTS-22K	
R88	470KΩ	½		BTS-470K	
R89	1.5Meg 5%	½		BTS-1.5Meg-5%	
R90	1.5Meg 5%	½		BTS-1.5Meg-5%	Note 6
R91	12KΩ	½		BTS-12K	Note 7
R92	2.2Meg	½		BTS-2.2Meg	
R93	1500Ω	½		BTS-1500	
R94	8200Ω	½		BTS-8200	
R95	100KΩ 5%	½		BTS-100K 5%	
R96	100KΩ 5%	½		BTS-100K 5%	
R97	4.7Meg	½		BTS-4.7Meg	
R98	1Meg	½		BTS-1Meg	
R99	12KΩ	2		BTB-12K	
R100	[illegible]	1		BTA-8200	
R101	[illegible]			BTS-1200	
R102	100KΩ 5%	½		[illegible] 5%	Note 8
R103	120KΩ	½		BTS-120K	
R104	15KΩ	½		BTA-15K	
R105	8200Ω	½		BTS-8200	
R106	47Ω	½			
R107	470KΩ	½		BTS-470K	
R108	50Ω	5		J-3/4A-50	Note 9
R109	27KΩ	2		BTB-27K	
R110	27KΩ	2		BTB-27K	
R111	27KΩ	2		BTB-27K	
R112	1800Ω	2		BTB-1800	
R113	3.9Ω	½			
R114	470KΩ	1			
R115	200Ω	15			Note 2
R116	200Ω	15			Note 2
R117	2200Ω	20		2B-2250	
R118	6800Ω	2		BTB-6800	Note 3
R119	6800Ω	2		BTB-6800	
R120	6800Ω	2		BTB-6800	
R121	[illegible]	½		[illegible]	Note 10
R122	470Ω	1		BTA-470	Note 5
R123	10KΩ	2		BTB-10K	
R124	3900Ω	2		BTB-3900	Note 4
R125	3900Ω	2		BTB-3900	Note 4
R126	820Ω	1		BTA-820	
R127	22Ω	½			
R128	100KΩ	½		BTS-100K	
R129	10Meg	½		BTS-10Meg	
R130	560Ω	½		BTS-560	
R131	560Ω	½		BTS-560	
R132	10KΩ	½		BTS-10K	
R133	220KΩ	½		BTS-220K	
R134	100KΩ	½		BTS-100K	Note 11
R135	100KΩ	2		BTS-100K	Note 11

◆ Items R86A, R86B, R86C, C114A, C114B, C114C are combined in one unit.
Note 1. Some Models may use a 150KΩ resistor in this application.
Note 2. Some Models may use a single 100Ω (50 watt) resistor to obtain desired value.
Note 3. Some Models may use a single 1800Ω (20 watt) resistor to obtain desired value Ch. 132.045. uses a 2200Ω (20 watt) resistor in this application.
Note 4. Some Models may use two resistors in parallel to obtain desired value.
Note 5. Not used in Ch. 132.045.
Note 6. Ch. 132.045 uses a 1Meg resistor in this application.
Note 7. Ch. 132.045 uses a 10KΩ resistor in this application.
Note 8. Ch. 132.045 uses a 91KΩ resistor in this application.
Note 9. Ch. 132.045 uses a 300Ω resistor in this application.
Note 10. Ch. 132.045 use a 15KΩ resistor in this application.
Note 11. Some Models may use RF Chokes in this application.

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA Silvertone PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No
T1	117VAC @ 1.9A	670VCT .250ADC @ 230VAC .030ADC	5VAC @ 3A	6.3VAC @1.2A SEC. 1 6.3VAC @.3A	E-25606				

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	RATING DC RESISTANCE SEC.	REPLACEMENT DATA Silvertone PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No	NOTES
T2	190Ω	105Ω	N22446-1	A-8122 ①	A-4003 HVO-9-2	TBO-3 ① TFB-13	A-97Y D-19	Vert. Osc. Trans. Horiz. Output Trans.
T3	437Ω tap @ 20Ω	360 tap @ 3.7Ω, 11.7Ω, 31.7Ω SEC. 2 0Ω	N24989					
T4	1560Ω tap @ 4.2Ω		N24990-1	A-8141	A-3039	TBO-12	A-104X	Vert. Output Trans.
T5A	24Ω		N24807	DY-11 ③		TY-7 ③	Y-19 ④	Horiz. Deflection Coils
B	46Ω							Vert. Deflection Coils
T6	18Ω	1Ω	N40027					Width & AGC Coil

① Drill one new mounting hole.
② No connection between Terminal 7 and 8.
③ Use original deflection coil network.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA Silvertone PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T7	4.5KΩ	3.4Ω	300Ω	.4Ω	C-24776-1	A-3849	A-3019	RO-9 ①	S-5X	

① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS SIZE	RATINGS FIELD	RATINGS V. C. IMP.	REPLACEMENT DATA Silvertone PART No.	JENSEN PART No.	QUAM PART No.	NOTES
SP1	5"	PM	3.4Ω	C-25627	ST-105 Mod. P5-X	5A07	

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	RATINGS D.C. RESISTANCE	RATINGS INDUCTANCE (0 CURRENT) 1000 A.C.	REPLACEMENT DATA Silvertone PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
LJ	.150ADC	127Ω	2.9 Hy.	C-23087-1	C-2327	C-2991 ①	TR-3300 ①	C-13X ①

① Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA Silvertone PART No.	MILLER PART No.	IRC PART No.	NOTES
L2	UHF RF Choke						Note 1
L3	UHF RF Choke						Note 1
L4	UHF Ant. Mixer Grid & Osc. Coils	0Ω					
L5	UHF Ant. Coil End Inductor	0Ω					
L6	UHF Mixer Grid End Inductor	0Ω					
L7	UHF Osc. Coil End Inductor	0Ω					
L8	RF Choke	0Ω					
L9	Fil. Choke	0Ω					Wound on 330Ω resistor
L10	Fil. Choke	0Ω					Wound on 330Ω resistor
L11	Fil. Choke	.3Ω					
L12	RF Choke	0Ω					
L13	Cathode Choke	0Ω					
L14	RF Choke	0Ω					
L15	Neutralizing Coil	.1Ω					
L16	UHF IF Input Tuning	0Ω					Tapped
L17	Fil. Choke	.1Ω					
L18	127MC IF Trans.	0Ω					Includes 15KΩ resistor, two 8.2MMF capacitors
L19	UHF 127MF IF Coupling	0Ω	0Ω				Channel 6 Sec. 0Ω
L20	VHF Ant. Trans.	0ΩCT	0Ω				Low Channel Sec. 0Ω Channel 13
L21	Ant. Coil	0Ω					
L22	Ant. Coils	0Ω					
L23	Fil. Choke	.2Ω				CL-1	.56 Microhenry
L24	Neutralizing Coil	0Ω					
L25	RF Coil	0Ω					Channel 13
L26	RF Coils	0Ω					
L27	Mixer Grid Coil	0Ω					Channel 13

PARTS LIST AND DESCRIPTIONS (Continued)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA Silvertone PART No.	REPLACEMENT DATA MILLER PART No.	REPLACEMENT DATA IRC PART No.	NOTES
L28	Mixer Grid Coils	0Ω					
L29	Fil. Choke	0Ω					
L30	Osc. Plate Coil	0Ω					
L31	Osc. Coil	0Ω					
L32	Conv. Plate Coil	.3Ω					
L33	1st. Video IF	.1Ω		N25410			Includes Trap
L34	Fil. Choke	0Ω		N23095			
L35	2nd. Video IF	.1Ω		N25411			Includes Trap
L36	Fil. Choke	0Ω		N23095			
L37	3rd. Video IF	.2Ω		N25412			Includes Trap
L38	RF Choke	1.8Ω		N22500-19			20 Microhenries wound on 18KΩ resistor
L39	4th. Video IF	.3Ω		N25413			Includes Trap
L40	RF Choke	1.8Ω		N22500-19			20 Microhenries wound on 18KΩresistor
L41	Cathode Trap	0Ω	.1Ω	N25415	6219		
L42	5th. Video IF	.2Ω		N25474			Includes Trap
L43	RF Choke	2Ω		N22500-8			20 Microhenries wound on 12KΩ resistor
L44	Series Peaking Coil	2.1Ω		N25468-6	6176		40 Microhenries
L45	Shunt Peaking Coil	3.7Ω		N25468-5	6177		100 Microhenries
L46	Series Peaking Coil	.3Ω		N25916	6175		1.7 Microhenries
L47	Series Peaking Coil	6.5Ω		N25468-8	6181 †		250 Microhenries wound on 16KΩ resistor
L48	4.5MC Trap	1.3Ω		N25609	1470		
L49	Shunt Peaking Coil	5.4Ω		N25468-1	6180		185 Microhenries
L50	Sound IF	1.6Ω		N25543	1470A		
L51	Ratio Det.	3.7Ω	.4Ω CT	N25322	1468		Tertiary Winding 1Ω
L52	Horiz. Osc.	75Ω		N23449	6210		

Note 1. Some Models use 100KΩ resistor in this application.
† Parallel with 16KΩ resistor.

SELENIUM RECTIFIER

ITEM No.	RATING CURRENT	REPLACEMENT DATA Silvertone PART No.	SYLVANIA PART No.	SELETRON PART No.	FEDERAL PART No.	MALLORY PART No.	SARKES TARZIAN PART No.
M1	.030	N25967	NA5	8Y1	1214B	6S35	35
M2	.030	N25967	NA5	8Y1	1214B	6S35	35

FUSES

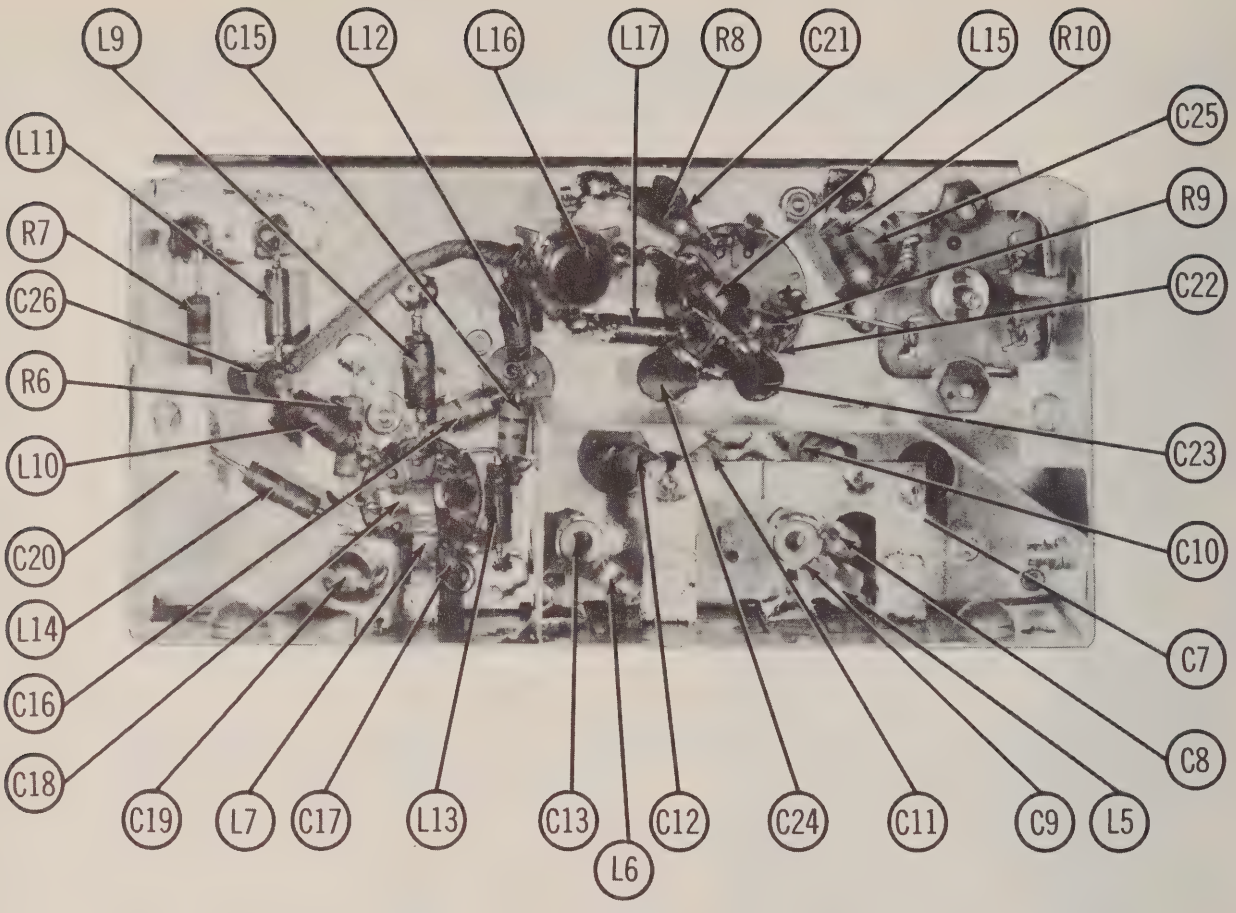
ITEM No.	TYPE	RATING	REPLACEMENT DATA Silvertone PART No. FUSE	Silvertone PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	BUSS PART No. FUSE	BUSS PART No. HOLDER
M3	3AG-P/T	1/4A 250V	N22593		318.250 (3AG-1/4A-P/T)		GJV-1/4	
M4	3AG-P/T	1/2A 250V			318.500 (3AG-1/2A-P/T)		GJV-1/2	

DIAL LIGHTS

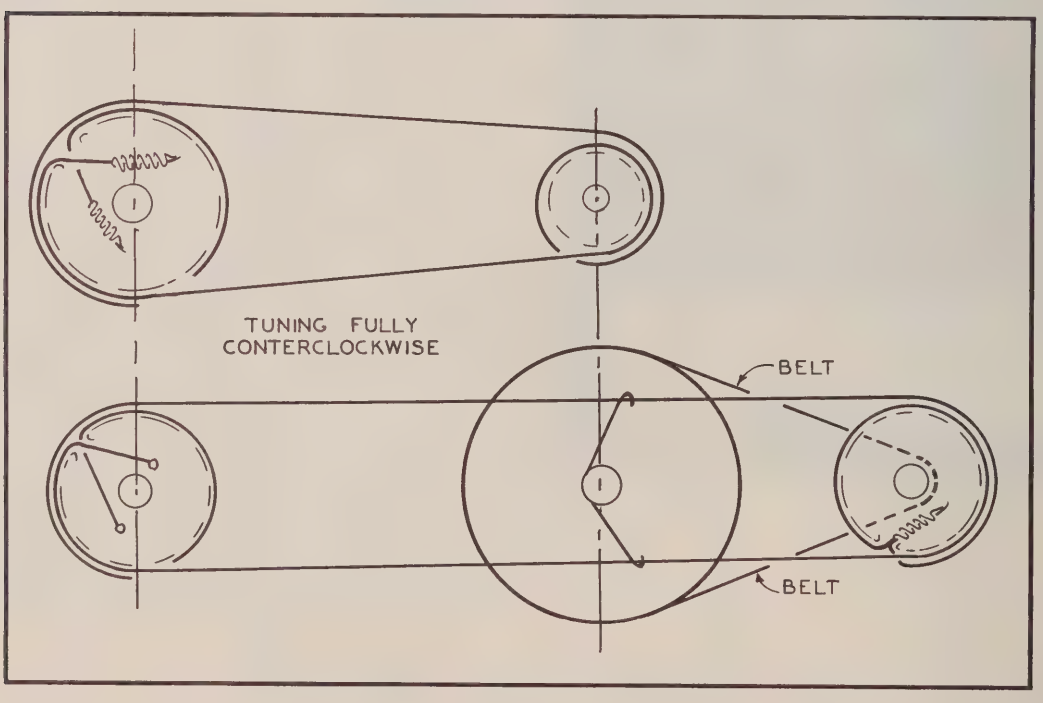
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA Silvertone PART No.	REPLACEMENT DATA	NOTES
M5	Bayonet	6-8	.15	Brown			Type #47

MISCELLANEOUS

ITEM No.	PART NAME	Silvertone PART No.	NOTES
M6	RF Tuner	N25267-4	Dual, UHF-VHF
M7	Trap Assy.	N25963	IF-FM Trap, UHF Tuner
M8	Trap Assy.	N25963	IF-FM Trap, VHF Tuner
M9	Switch	N40556	TV-Phono Selector
M10	Switch	N25525	Local-Distance
M11	Crystal		IN72
M12	Centering Magnet		
M13	Ion Trap	N25662-1	
M14	Correction Magnet	N40079-1	(2 Used)
B2	Trimmer	N24528	Horiz. Drive (40-370MMF)
	Back Cover (Cabinet)	N25598-12	
	Safety Glass	N25537	
	Mask	N40412	
	Knob	N40543-1	Channel Selector (VHF)
	Knob	N25935-1	Contrast
	Knob	N25094-1	Fine Tuning (VHF), Channel Selector (UHF)
	Knob	N40542-1	Off/On Volume
	Knob	N24699-2	TV-Phono Selector
	Disc	N25095	UHF Channel Indicator



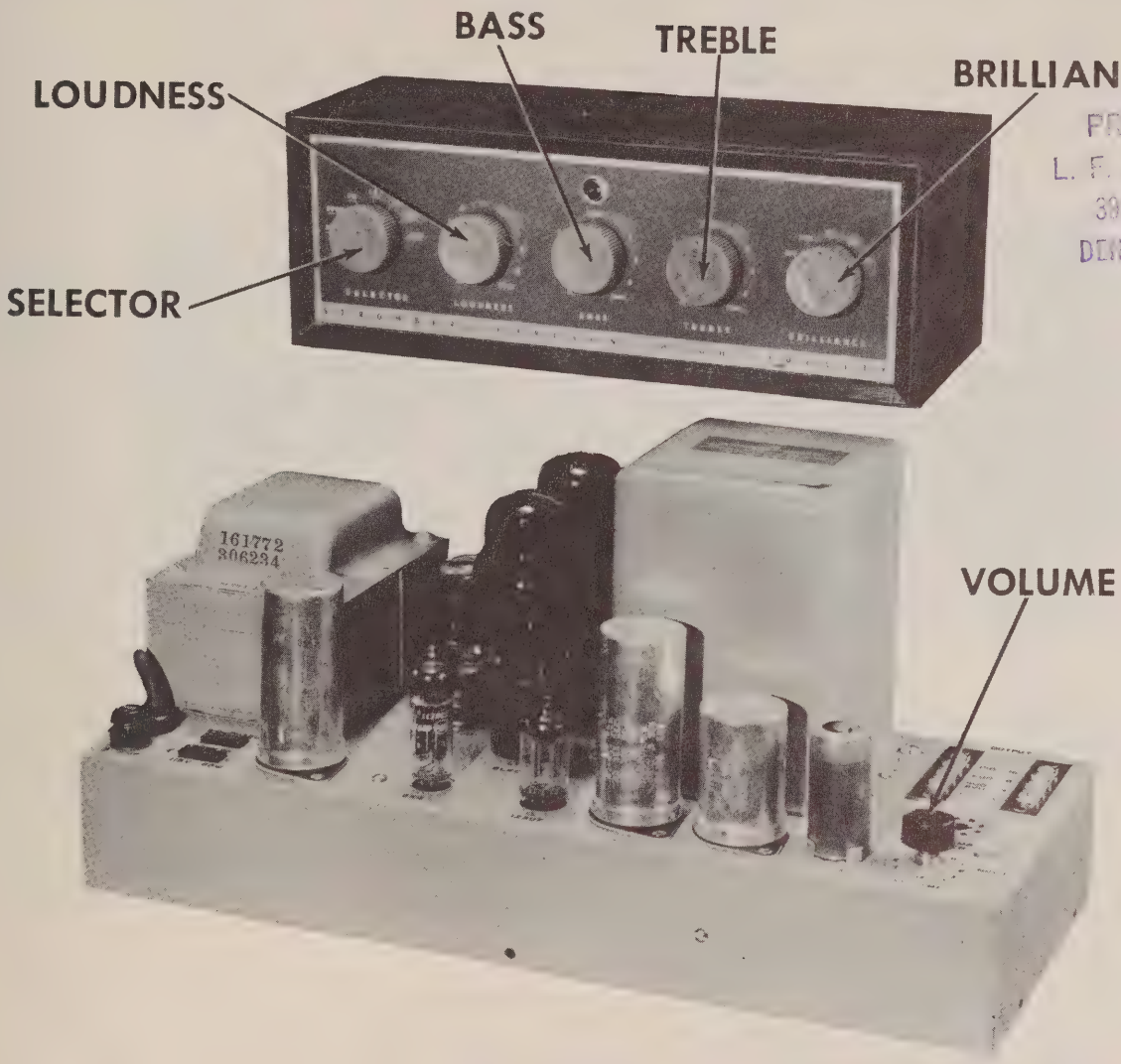
UHF TUNER-BOTTOM VIEW



DRIVE CORD STRINGING

PHOTOFACT* Folder
*TRADE MARK

STROMBERG-CARLSON MODEL AR-425



PROPERTY OF
L. F. [illegible]
3924 [illegible] ST.
DENVER, COLORADO

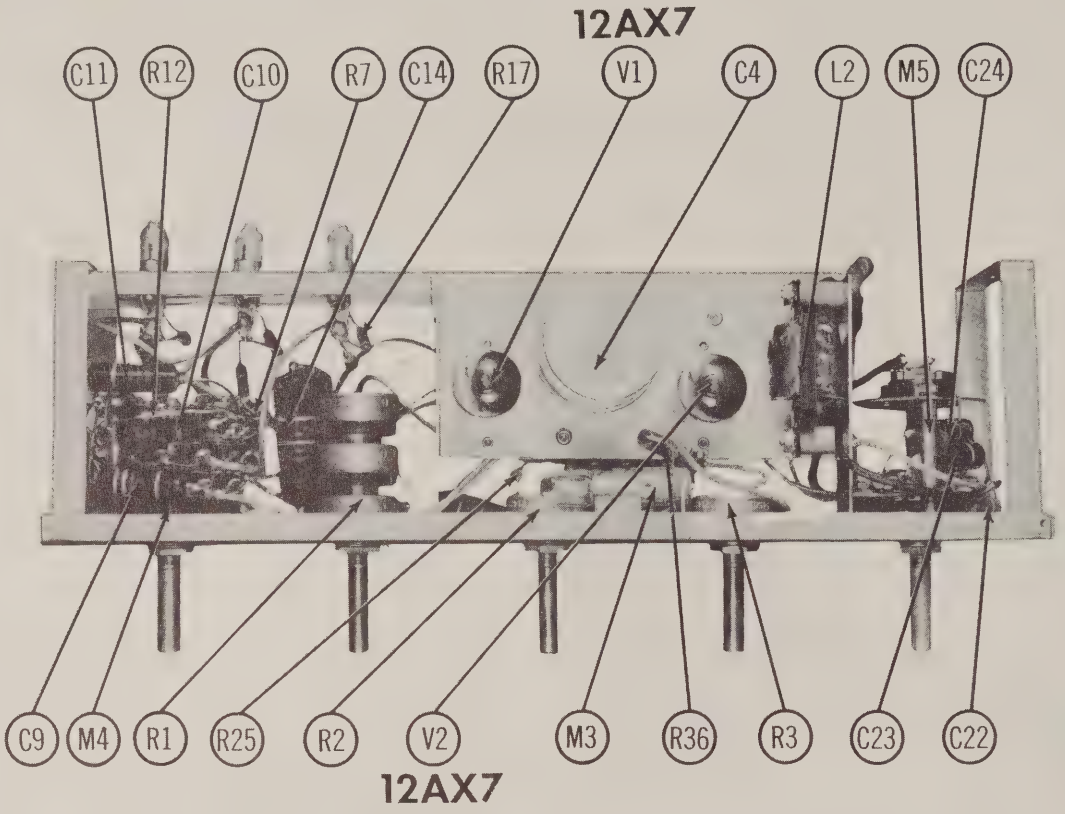
STROMBERG-CARLSON
MODEL AR-425

STROMBERG-CARLSON
MODEL AR-425

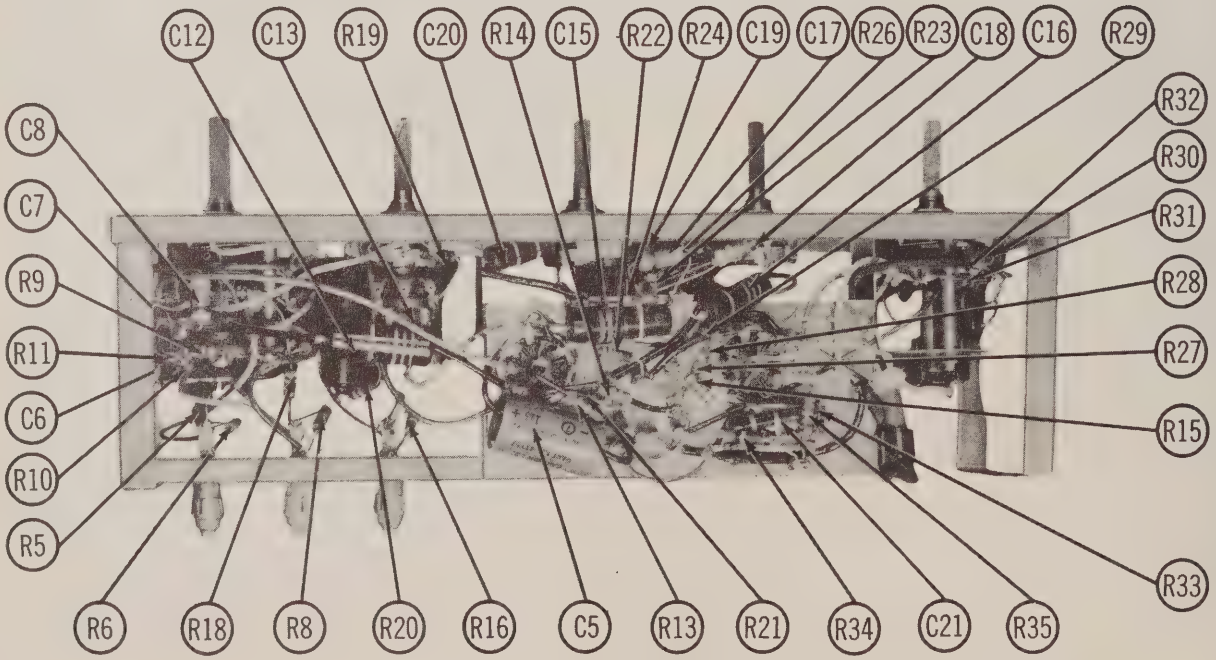
TRADE NAME	Stromberg- Carlson Model AR-425
MANUFACTURER	Stromberg- Carlson Co., 100 Carlson Rd., Rochester 3, N.Y.
TYPE SET	AC Operated 3 Channel Audio Amplifier
TUBES (Eight)	Types 12AX7 Pre-Amp., 12AX7 AF Amp., 12AU7 AF Amp.-Phase Inv., 12AU7 Driver, (2) 6L6G Audio Output, 5Y3GT Rectifer, 6X4 Rectifier
POWER SUPPLY	105-125 Volts AC
RATING	1.1 Amp. @ 117 Volts AC

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

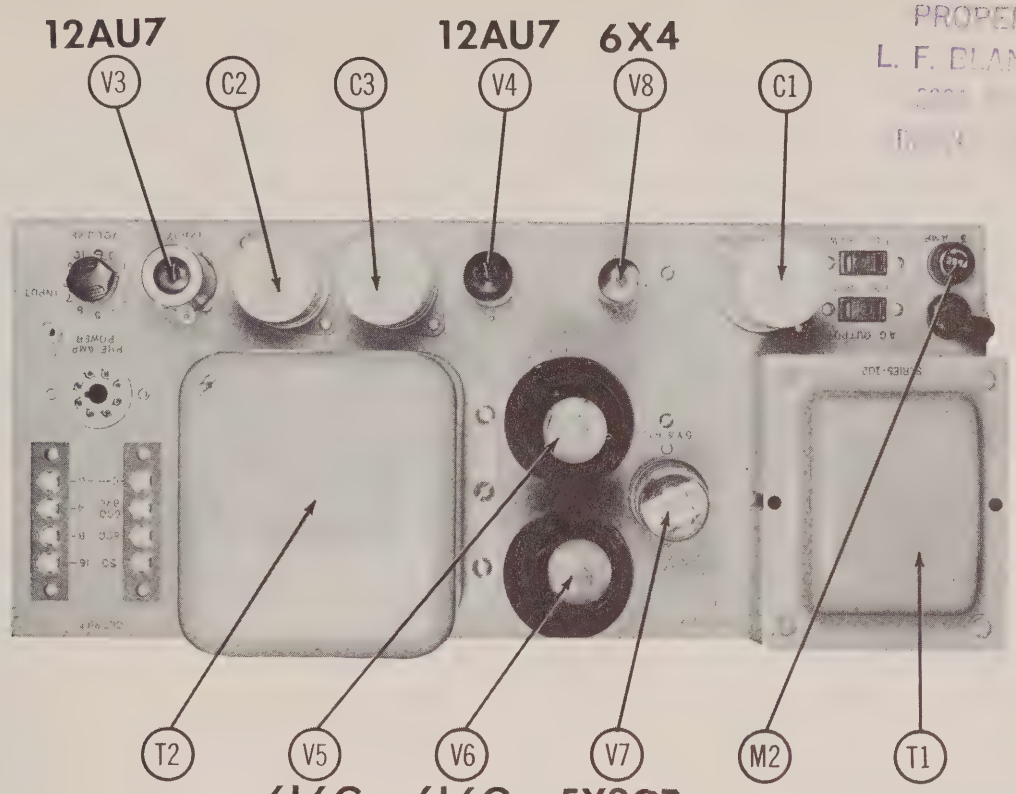


PRE-AMP CHASSIS TOP VIEW

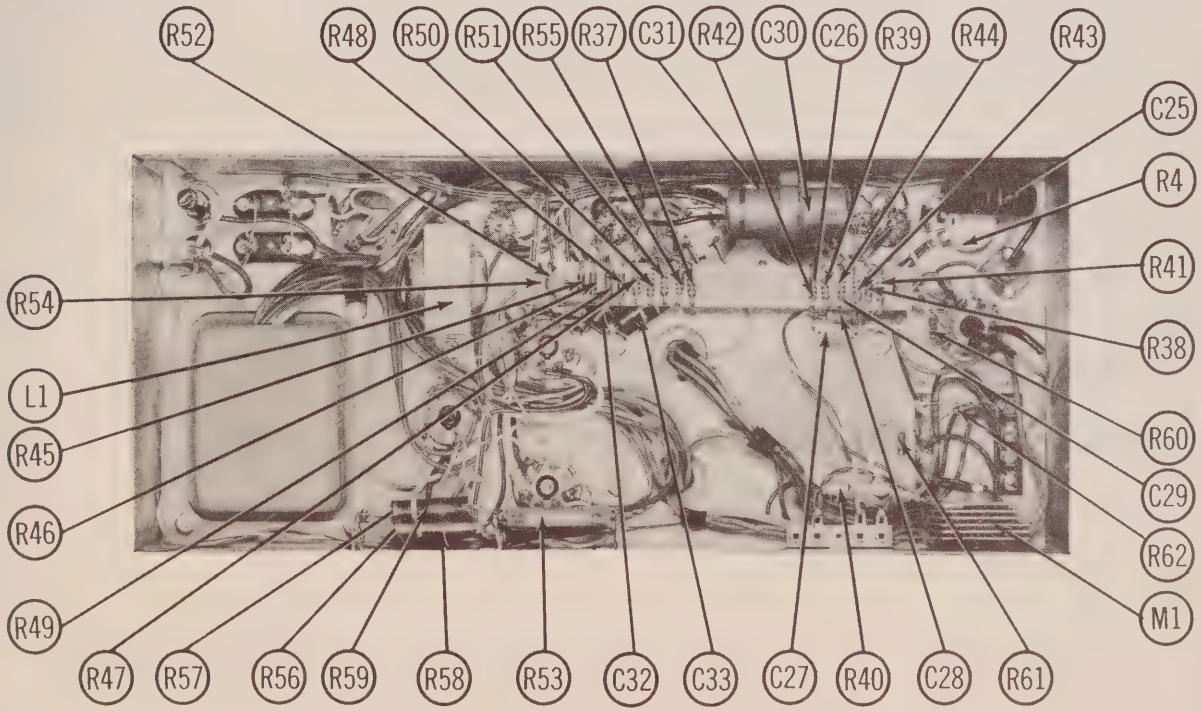


PRE-AMP CHASSIS BOTTOM VIEW

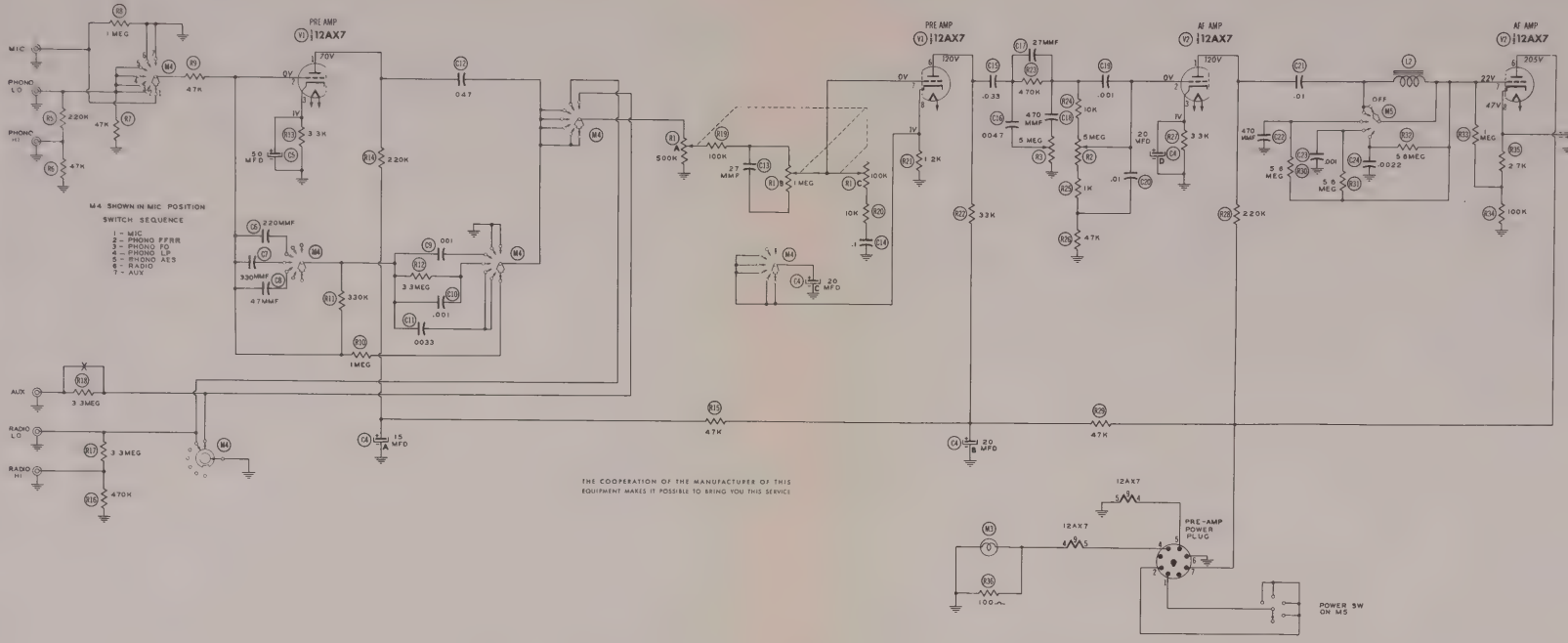
PROPERTY OF
L. F. BLANKENSHIP



POWER AMP CHASSIS TOP VIEW



POWER AMP CHASSIS BOTTOM VIEW



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	12AX7	† 361KΩ	*47KΩ	3.3KΩ	16Ω	0Ω	† 127KΩ	1.1Meg	1.2KΩ	8Ω
V 2	12AX7	† 267KΩ	48KΩ	3.3KΩ	15Ω	20Ω	† 47KΩ	1.1Meg	103KΩ	17Ω

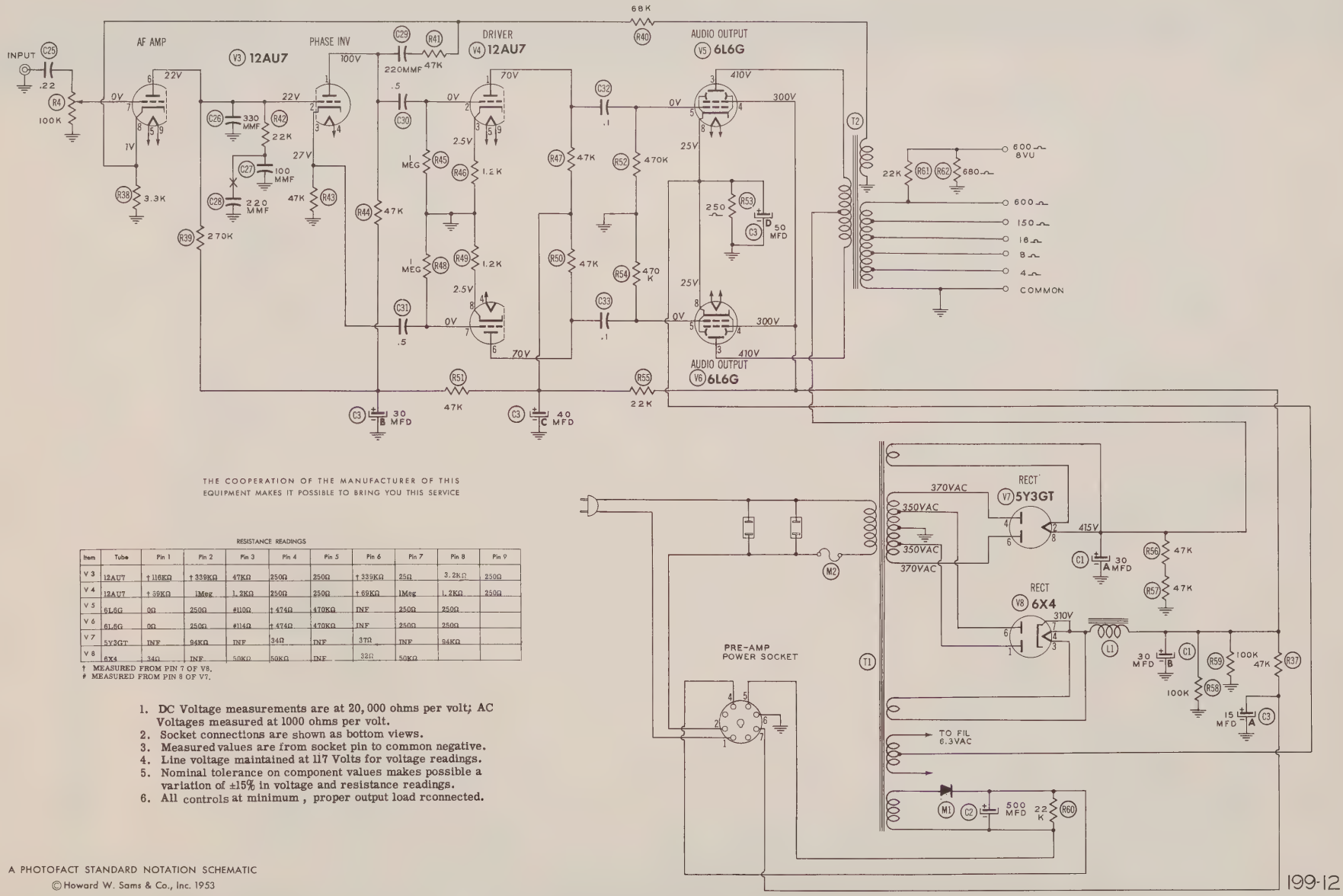
† MEASURED FROM PIN 7 OF V8.
* MEASURED WITH SELECTOR SWITCH IN "AUX" POSITION

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 Volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load reconnected.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
©Howard W. Sams & Co., Inc. 1953

199-12

PRE-AMP SCHEMATIC



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 3	12AU7	† 116KΩ	† 339KΩ	47KΩ	250Ω	250Ω	† 339KΩ	25Ω	3.2KΩ	250Ω
V 4	12AU7	† 69KΩ	1Meg	1.2KΩ	250Ω	250Ω	† 69KΩ	1Meg	1.2KΩ	250Ω
V 5	6L6G	0Ω	250Ω	#110Ω	† 474Ω	470KΩ	INF	250Ω	250Ω	
V 6	6L6G	0Ω	250Ω	#114Ω	† 474Ω	470KΩ	INF	250Ω	250Ω	
V 7	5Y3GT	INF	94KΩ	INF	34Ω	INF	37Ω	INF	94KΩ	
V 8	6X4	34Ω	INF	50KΩ	50KΩ	INF	32Ω	50KΩ		

† MEASURED FROM PIN 7 OF V8.
# MEASURED FROM PIN 8 OF V7.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 Volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load rconnected.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

© Howard W. Sams & Co., Inc. 1953

199-12

POWER AMP SCHEMATIC

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: Stromberg-Carlson PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	NOTES
V1	Pre Amplifier	12AX7	12AX7	9A	
V2	AF Amplifier	12AX7	12AX7	9A	
V3	AF Amplifier-Phase Inverter	12AU7	12AU7	9A	
V4	Driver	12AU7	12AU7	9A	
V5	Audio Output	6L6G	6L6G	7S	
V6	Audio Output	6L6G	6L6G	7S	
V7	Rectifier	5Y3GT	5Y3GT	5T	
V8	Rectifier	6X4	6X4	5BS	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: Stromberg-Carlson PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	▲30	500	46320	AFH2-72		BO53		FP288	TVL-2830	
B	■30	500								
C2	▲500	50	111608	AFH1-13		AO16		WP065	TVL-1330	
C3A	▲15	300	35590	AFH4-87		CO33			R1004	
B	■30	350				BR505				
C	▲40	450								
D	50	50								
C4A	■15	450	111609	AFH4-66		DO89		FP426	TVL-4712	
B	▲20	450								
C	20	25								
D	▲20	25								
C5	50	25	41157	PRS25/50		BR502A		TC29	TVA-1206	
C6	220		110453	SI220	D6-221		GP2K-221	UC-5322	5GA-T22	
C7	330		110454	SI330	D6-331		GP2K-331	UC-5333	5GA-T33	
C8	47		110597	SI47	D6-470		GP1K-470	UC-5447	5GA-Q47	
C9	.001	400	110534	P688-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	
C10	.001	400	110534	P688-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	
C11	.0033	400	110537	P688-0033	D6-332	PTE6D33	GP2-333-332	PT6233	6TM-D33	
C12	.047	400	110544	P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C13	27		110485	SI27	D6-270		GP1K-270	UC-5427	5GA-Q27	
C14	.1	400	110546	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C15	.033	400	110543	P688-033		PTE6S33		PT4133	6TM-S33	
C16	.0047	400	110538	P688-0047	D6-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	
C17	27		110485	SI27	D6-270		GP1K-270	UC-5427	5GA-Q27	
C18	470		110455	SI470	D6-471		GP2K-471	UC-5347	5GA-T47	
C19	.001	400	110534	P688-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	
C20	.01	400	110540	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C21	.01	400	110540	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C22	470		110455	SI470	D6-471		GP2K-471	UC-5347	5GA-T47	
C23	.001	400	110534	P688-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	
C24	.0022	400	110536	P688-0022	D6-222	PTE6D22	GP2-333-222	PT6222	6TM-D22	
C25	.22	400	110548							
C26	330		110454	SI330	D6-331		GP2K-331	UC-5333	5GA-T33	Note 1
C27	100		110451	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C28	220		110453	SI220	D6-221		GP2K-221	UC-5322	5GA-T22	Note 2
C29	220		110453	SI220	D6-221		GP2K-221	UC-5322	5GA-T22	
C30	.5	400	29521	P488-5		PTE4P5		PT405	4TM-S5	
C31	.5	400	29521	P488-5		PTE4P5		PT405	4TM-S5	
C32	.1	400	110546	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C33	.1	400	110546	P488-1	DF-104	PTE4P1		PT401	4TM-P1	

Note 1. Some Models use 100MMF in this application (Part #110451)
Note 2. Not used in all Models.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: Stromberg-Carlson PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	500KΩ	1/2	145622					Loudness
B	1Meg	1/2						
C	100KΩ	1/2						
R2A	5Meg	1/2	145619	Q13-141	AG-69-Z		U-65	Bass
B	Shaft		Not Req.	Not Req.	FS-3		Not Req.	Attach to R2A
R3A	5Meg	1/2	145619	Q13-141	AG-69-Z		U-65	Treble
B	Shaft		Not Req.	Not Req.	FS-3		Not Req.	Attach to R3A
R4A	100KΩ	1/2	145620	Q13-128	AG-51-Z	B-41	U-39	Volume
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R4A

CHASSIS—TOP VIEW

RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: Stromberg-Carlson PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R5	220KΩ	1/2	28183	BTS-220K	
R6	47KΩ	1/2	28177	BTS-47K	
R7	47KΩ	1/2	28177	BTS-47K	
R8	1Meg	1/2	28191	BTS-1Meg	
R9	47KΩ	1/2	28177	BTS-47K	
R10	1Meg	1/2	28191	BTS-1Meg	
R11	330K	1/2	28185	BTS-330K	
R12	3.3Meg	1/2	28197	BTS-3.3Meg	
R13	3300Ω	1/2	28164	BTS-3300	See Note.
R14	220KΩ	1/2	28183	BTS-220K	
R15	47KΩ	1/2	28177	BTS-47K	
R16	470KΩ	1/2	28187	BTS-470K	
R17	3.3Meg	1/2	28197	BTS-3.3Meg	
R18	3.3Meg	1/2	28197	BTS-3.3Meg	
R19	100KΩ	1/2	149385	BTS-100K	
R20	10KΩ	1/2	28170	BTS-10K	
R21	1200Ω	1/2	28159	BTS-1200	
R22	33KΩ	1/2	28175	BTS-33K	
R23	470KΩ	1/2	28187	BTS-470K	
R24	10KΩ	1/2	28170	BTS-10K	
R25	1000Ω	1/2	28158	BTS-1000	
R26	47KΩ	1/2	28177	BTS-47K	
R27	3300Ω	1/2	28164	BTS-3300	
R28	220KΩ	1/2	28183	BTS-220K	
R29	47KΩ	1/2	28177	BTS-47K	
R30	5.6Meg	1/2	28200	BTS-5.6Meg	
R31	5.6Meg	1/2	28200	BTS-5.6Meg	
R32	5.6Meg	1/2	28200	BTS-5.6Meg	
R33	1Meg	1/2	28191	BTS-1Meg	

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: Stromberg-Carlson PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R34	100KΩ	1/2	149385	BTS-100K	
R35	2700Ω	1/2	28163	BTS-2700	
R36	100Ω	1	149167	BTA-100	
R37	47KΩ	1/2	28177	BTS-47K	
R38	3300Ω	1/2	28164	BTS-3300	
R39	270KΩ	1/2	28184	BTS-270K	
R40	68KΩ	1/2	28179	BTS-68K	
R41	47KΩ	1/2	28177	BTS-47K	
R42	22KΩ	1/2	149384	BTS-22K	
R43	47KΩ	1/2	28177	BTS-47K	
R44	47KΩ	1/2	28177	BTS-47K	
R45	1Meg	1/2	28191	BTS-1Meg	
R46	1200Ω	1/2	28159	BTS-1200	
R47	47KΩ	1/2	28177	BTS-47K	
R48	1Meg	1/2	28191	BTS-1Meg	
R49	1200Ω	1/2	28159	BTS-1200	
R50	47KΩ	1/2	28177	BTS-47K	
R51	47KΩ	1/2	28177	BTS-47K	
R52	470KΩ	1/2	28187	BTS-470K	
R53	250Ω	10	46358	1-3/4A-250	
R54	470KΩ	1/2	28187	BTS-470K	
R55	22KΩ	1/2	149384	BTS-22K	
R56	47KΩ	2	149060	BTB-47K	
R57	47KΩ	2	149060	BTB-47K	
R58	100KΩ	2	149265	BTB-100K	
R59	100KΩ	2	149265	BTB-100K	
R60	22KΩ	1/2	149384	BTS-22K	
R61	22KΩ	1/2	149384	BTS-22K	
R62	680Ω	1/2	28156	BTS-680	

Note : Some models use a 1800Ω resistor in this application.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: Stromberg-Carlson PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T1	117VAC @1.1A	740VCT .040ADC	700VCT .015ADC	17VAC .150ADC	161772				
		SEC. 4	SEC. 5	SEC. 6					
		5VAC @2A	6.3VAC @.56A	6.3VAC @2.5A					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: Stromberg-Carlson PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T2	6KΩ CT	600Ω tap @ 150Ω, 16Ω, 8Ω, 4Ω	224Ω CT	27Ω tap @ 8.3Ω, .76Ω, .56Ω, .42Ω	161335			PCO-200		① Feed back winding
		SEC. 2								
		23Ω①								

FILTER CHOKE

ITEM No.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D. C. RESISTANCE	RATINGS: INDUCTANCE (0 CURRENT 1000 ~)	REPLACEMENT DATA: Stromberg-Carlson PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
L1	.015ADC	474Ω	10 Hy.	114186	C-1707 ①	C-2976 ①		C-3X

① Drill one new mounting hole.

PARTS LIST AND DESCRIPTIONS (Continued)

TONE CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ~)	Stromberg-Carlson PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
L2	0V	1.35KΩ	1.8 Hy.	161121				

SELENIUM RECTIFIER

ITEM No.	RATING	REPLACEMENT DATA					
	CURRENT	Stromberg-Carlson PART No.	SYLVANIA PART No.	SELETRON PART No.	FEDERAL PART No.	MALLORY PART No.	SARKES TARZIAN PART No.
M1	.150ADC	162261	NE5	5R1	1006A	6S200	200

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Stromberg-Carlson PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M2	3AG (Slo-Blo)	3-2/10A 125V	25156		31303.2 (3AG-3-2/10A Slo-Blo)	342001	MDL-3 2/10	HKP

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					Stromberg-Carlson PART No.		
M3	Bayonet	6.8	.15	Brown	30933		Type No. 47.

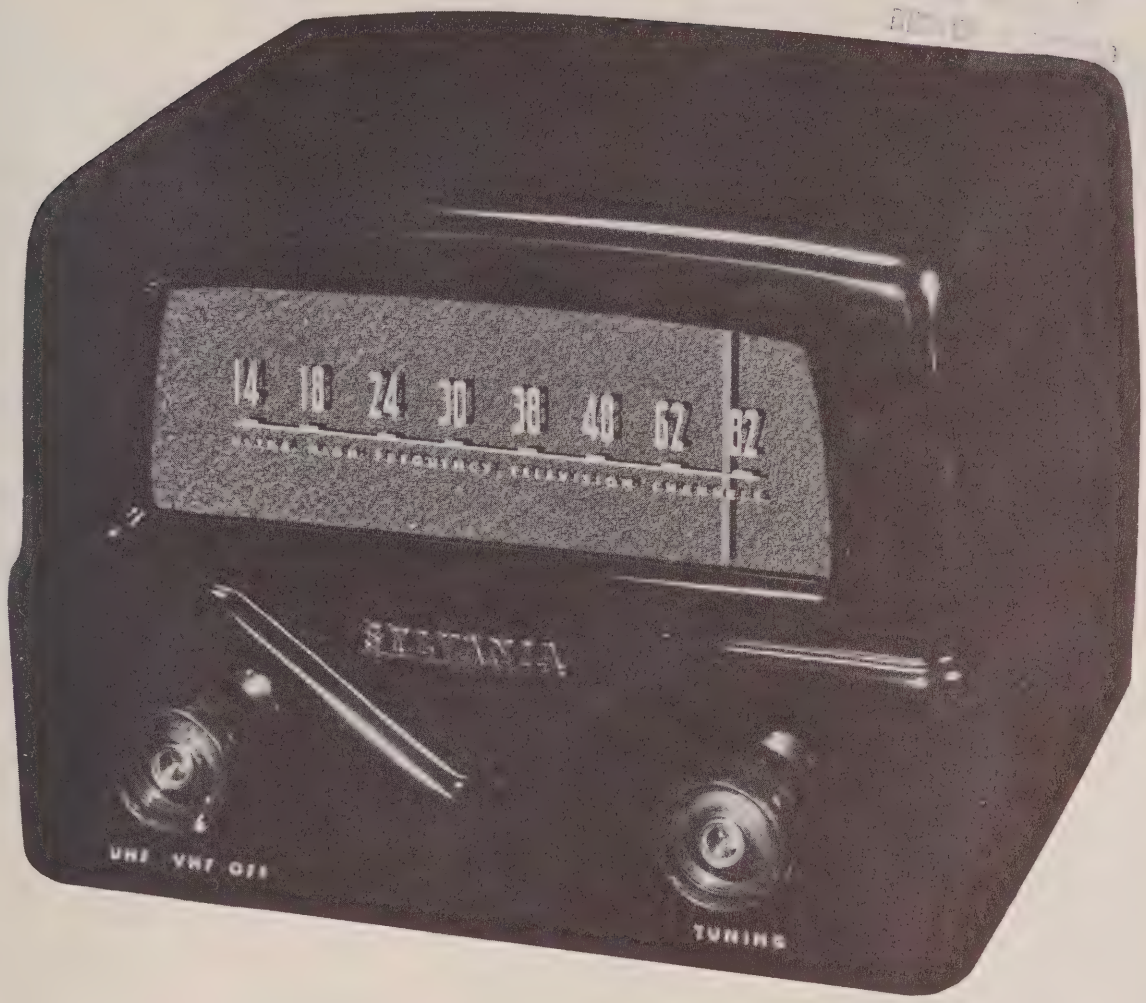
MISCELLANEOUS

ITEM No.	PART NAME	Stromberg-Carlson PART No.	NOTES
M4	Switch	158640	Input Selector
M5	Switch	158639	Off/On, High Frequency Cut-Off.
	Cable Extension Assy.	AK-25	25 Foot Extension Cables (Complete).

SYLVANIA
MODEL C32M (Tel. UHF Conv.)

PROPERTY OF
L. E. [illegible] SHIP

SYLVANIA
MODEL C32M (Tel. UHF Conv.)



SYLVANIA
MODEL C32M (Tel. UHF Conv.)

TRADE NAME	Sylvania Model C32M
SUPPLIER	Sylvania Elect. Prod., Inc., Radio & Tel. Div., 254 Rano St., New York 7, N.Y.
TYPE SET	AC Operated All Channel UHF Converter
TUBES (Two)	Types: 6AF4 RF Osc., 6CB6 IF Amp.
POWER SUPPLY	110-120 Volts AC-60 Cycle — RATING .14 Amp. @ 117 Volts AC
TUNING RANGE	Channels 14 Thru 83

THIS CONVERTER HAS BEEN PROPERLY ALIGNED AT THE FACTORY AND IS VERY STABLE. ALIGNMENT SHOULD NOT BE ATTEMPTED IN THE FIELD.

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

SYLVANIA
MODEL C32M

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	INSTALLATION NOTES
		SYLVANIA PART No.	STANDARD REPLACEMENT		
V1	RF Oscillator	6AF4	6AF4	7DK	
V2	IF Amplifier	6CB6	6CB6	7CM	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	SYLVANIA PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	■30	150		AFH2-11		B011		FP211	TVL-2422	
B	▲30	150								
C2	1				TCZ-1		NP0K-010		5TCCB-V1	
C3	1				TCZ-1		NP0K-010		5TCCB-V1	
C4	1				TCZ-1		NP0K-010		5TCCB-V1	
C5	.8-6.5									
C6	.4									
C7	.25									
C8	.8-6.5									
C9	1.5			SI1.5NP0	TCZ-1.5		NP0K-1R5	ZT-5515	5TCCB-V15	
C10	2									
C11	.68				TCA-.68		NP0K-R68			
C12	3-10									
C13	10									
C14	68			SI68	D6-680		GP1K-680	UC-5468	5GA-Q68	
C15	68			SI68	D6-680		GP1K-680	UC-5468	5GA-Q68	
C16	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C17	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C18	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C19	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C20	10			SI10	D6-100		GP1K-100	UC-541	5GA-Q1	
C21	10			SI10	D6-100		GP1K-100	UC-541	5GA-Q1	
C22	20			SI20	D6-200		GP1K-200	UC-542	5GA-Q2	
C23	20			SI20	D6-200		GP1K-200	UC-542	5GA-Q2	
C24	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	

RESISTORS

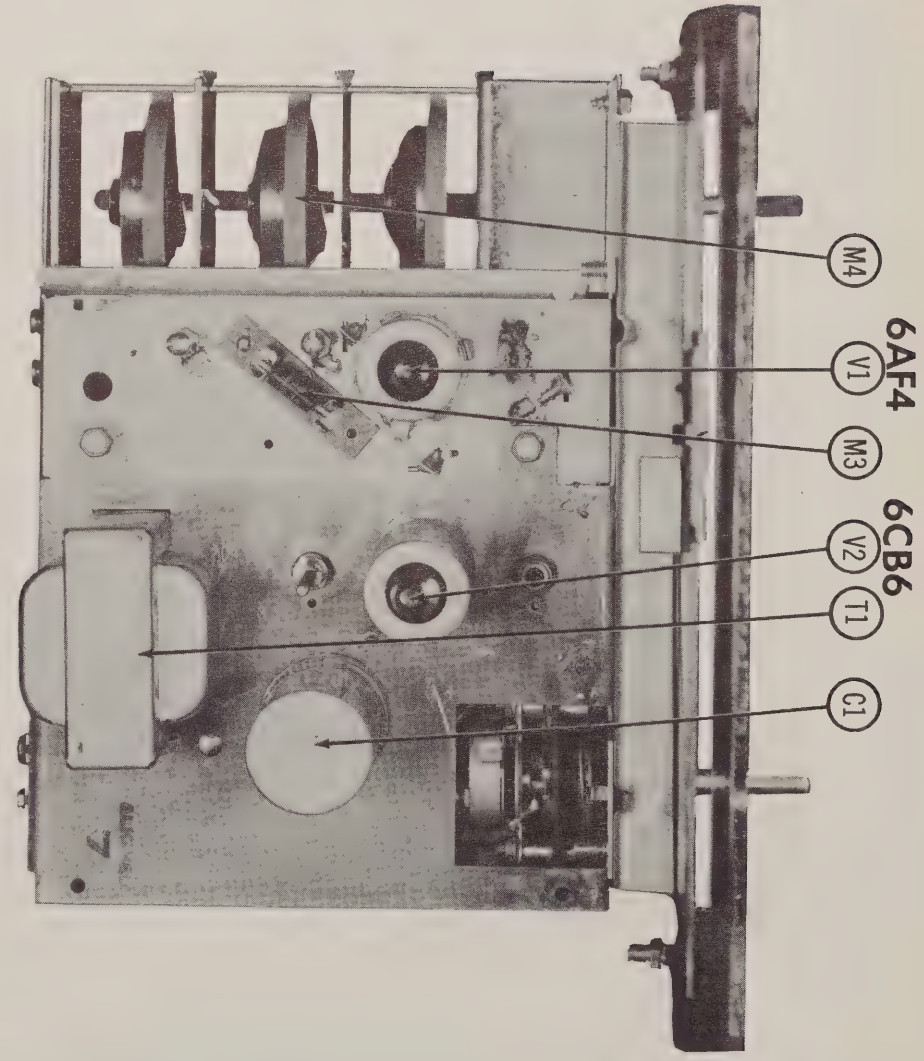
ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	SYLVANIA PART No.	IRC PART No.	
R1	1500Ω	1/2		BTS-1500	
R2	1500Ω	1/2		BTS-1500	
R3	22Ω	1/2			
R4	22Ω	1/2			

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	SYLVANIA PART No.	IRC PART No.	
R5	12KΩ	1/2		BTS-12K	
R6	470Ω	1/2		BTS-470	
R7	150Ω	1/2		BTS-150	
R8	1200Ω	1		BTA-1200	

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA				
	PRI.	SEC. 1	SEC. 2	SEC. 3	SYLVANIA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T1	117V @ .14A	117V .020ADC	6.3V @ .53A		B-630124-1				

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA SYLVANIA PART No.	REPLACEMENT DATA MILLER PART No.	NOTES
L1	UHF Pre-Selector, Mixer & Osc. Coils	0Ω				
L2	UHF Pre-Selector Coil End Inductor	0Ω				
L3	UHF Mixer Coil End Inductor	0Ω				
L4	UHF Osc. Coil End Inductor	0Ω				
L5	RF Choke	.1Ω				.38 Microhenry
L6	Cathode Choke	.1Ω				.38 Microhenry
L7	Fil. Choke	.				
L8	Fil. Choke	.1Ω				
L9	UHF IF Input Trans.	0Ω	0Ω			
L10	RF Choke	.1Ω				
L11	UHF IF Output Trans.	0Ω	0Ω			
L12	RF Choke	0Ω				

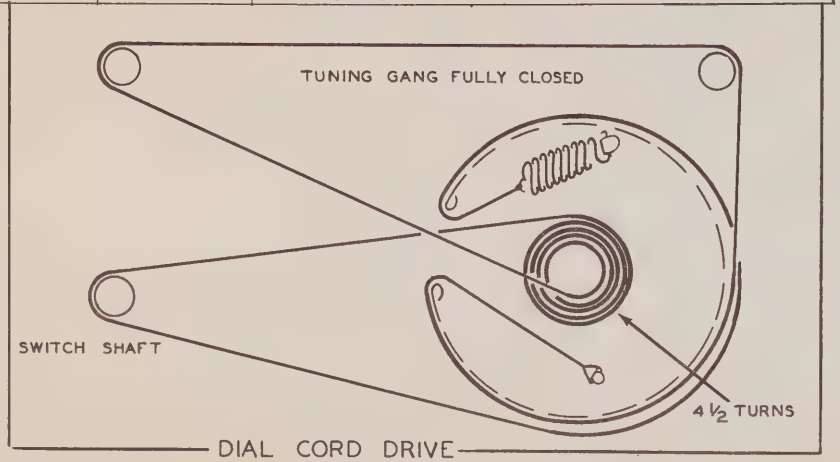
SELENIUM RECTIFIER

ITEM No.	RATING CURRENT	REPLACEMENT DATA SYLVANIA PART No.	SYLVANIA PART No.	SELETRON PART No.	FEDERAL PART No.	MALLORY PART No.	SARKES TARZIAN PART No.
M1	.020 Amp.			8Y1 ①	1214	6S35	35

① Fabricate Mounting Bracket

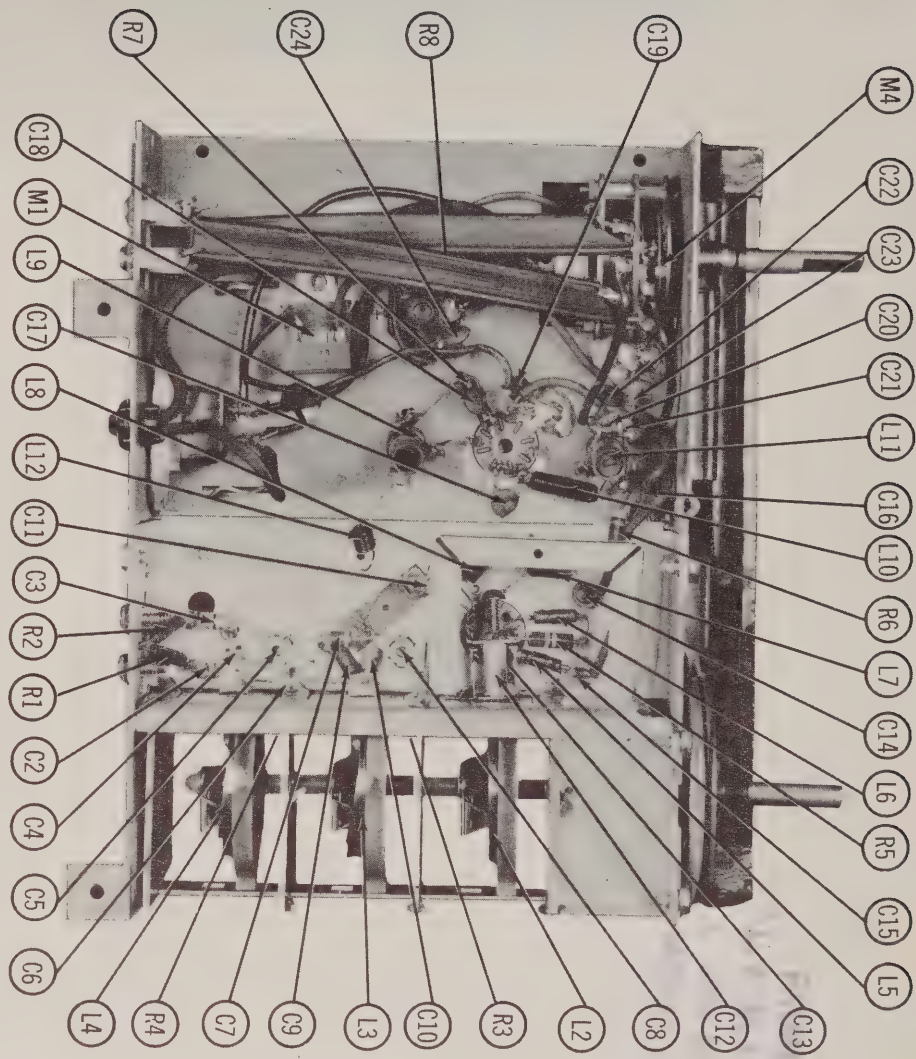
MISCELLANEOUS

ITEM No.	PART NAME	SYLVANIA PART No.	NOTES
M2	Tuning Assembly		
M3	Crystal		Mixer (1N82)
M4	Switch	573-0007	Function Selector

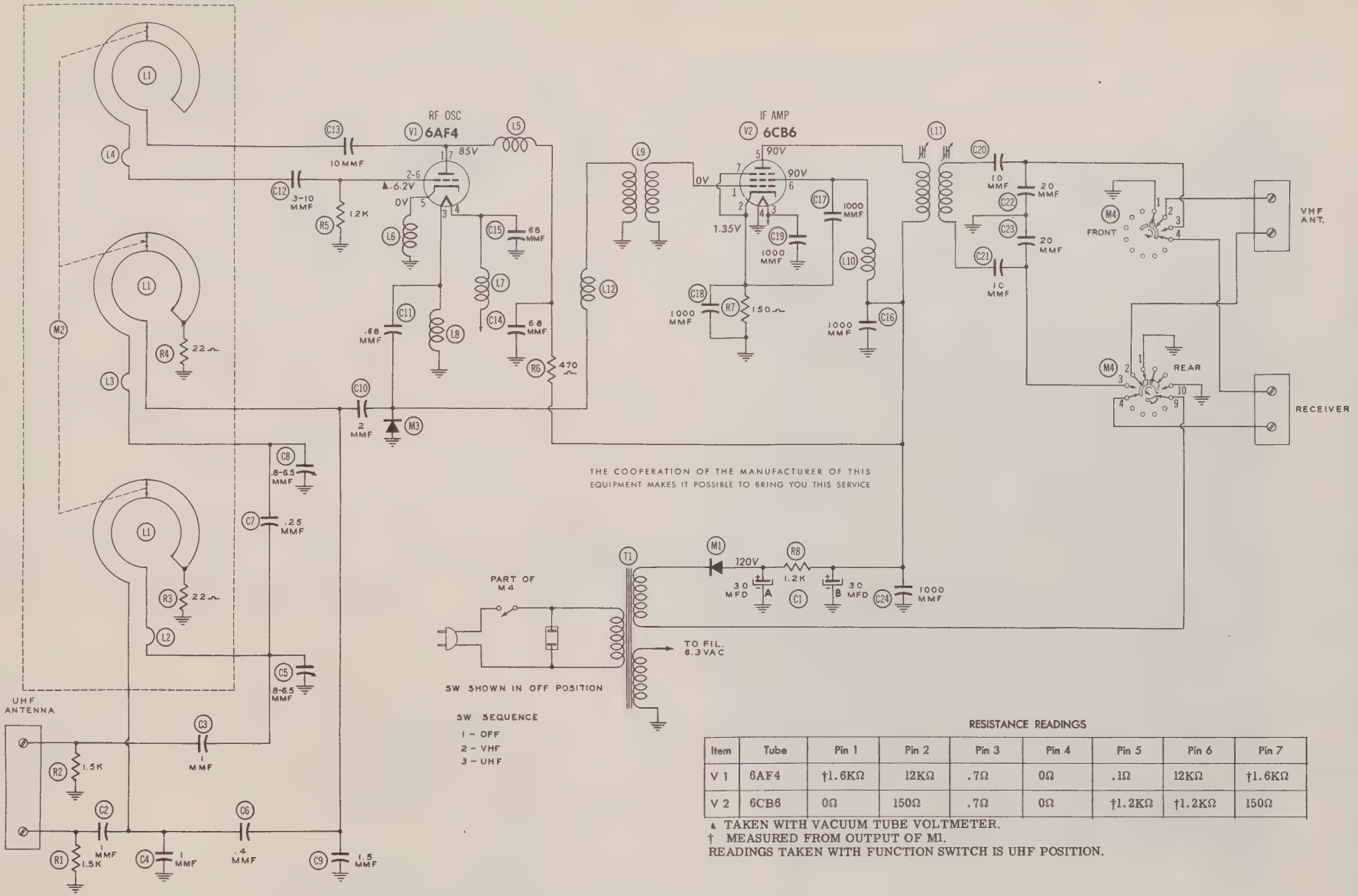


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



SYLVANIA MODEL C32M



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	6AF4	†1.6KΩ	12KΩ	.7Ω	0Ω	.1Ω	12KΩ	†1.6KΩ
V 2	6CB6	0Ω	150Ω	.7Ω	0Ω	†1.2KΩ	†1.2KΩ	150Ω

▲ TAKEN WITH VACUUM TUBE VOLTMETER.
† MEASURED FROM OUTPUT OF M1.
READINGS TAKEN WITH FUNCTION SWITCH IS UHF POSITION.

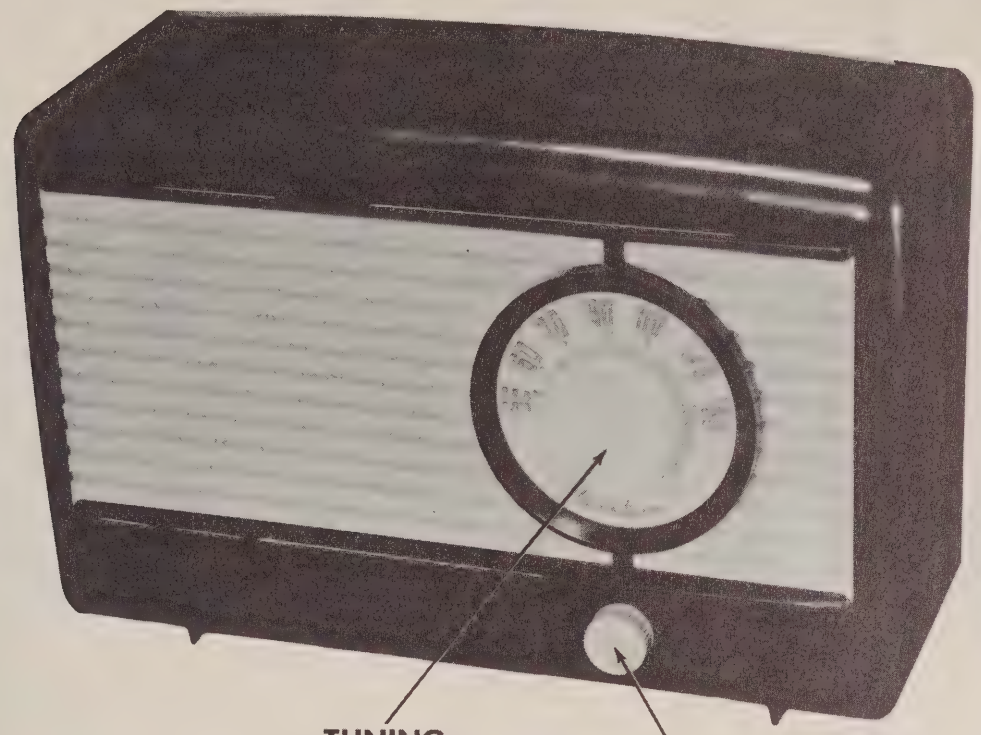
A PHOTOFACT STANDARD NOTATION SCHEMATIC

© Howard W. Sams & Co., Inc. 1953

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

TRUETONE
MODELS D-2108A, D-2109A

TRUETONE
MODELS D-2108A, D-2109A



TRUETONE
MODELS D-2108A, D-2109A

TRADE NAME	Truetone Models D-2108A, D-2109A
SUPPLIER	Western Auto Supply Co., 2107 Grand Ave., Kansas City, Mo.
TYPE SET	AC-DC Operated AM Superheterodyne Receiver
TUBES (Four)	Types 12BE6 Conv., 12AT6 Det-AVC-AF Amp., 50C5 Audio Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC-DC RATING .28 Amp @ 117 Volts AC
TUNING RANGE—BROADCAST	532.5-1620KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning capacitor fully closed and set pointer parallel with base of dial. Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than enecessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 7 (grid) of 12BE6 (V1). Low side to B-.	455KC (400~Mod)	Tuning gang fully open.	Across voice coil.	A1, A2	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.	45MMF	High side to antenna terminal on antenna coil. (Remove hank ant.) Low side to chassis.	1620 KC	"	"	A3	Adjust for maximum output.
3.	"	"	1500KC	Tune for max. signal.	"	A4	"
4.	"	"	600KC	"	"		Check calibration at 600KC

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	INSTALLATION NOTES
		TRUETONE PART No.	STANDARD REPLACEMENT		
V1	Converter	12BE6	12BE6	7CH	
V2	Det.-AVC-AF Amp	12AT6	12AT6	7BT	
V3	Audio Output	50C5	50C5	7CV	
V4	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP..	VOLT	TRUETONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	40	150	31-11	PRS150/40-40		EDL4415		2N511	TVA-2445	Red
B	40	150								Blue
C2	.05	200	32-4	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C3	100		35-30	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C4	.002	600	32-17	P688-002	D6-202	PTE6D2	GP2-333-202	PT622	6TM-D2	
C5	.01	400	32-29	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C6	.02	400	32-19	P488-02	DF-203	PTE4S2		PT412	4TM-S2	
C7	.05	400	32-5	P488-05		PTE4S5		PT415	4TM-S5	
C8	.05	400	32-5	P488-05		PTE4S5		PT415	4TM-S5	

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	TRUETONE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	2 Meg	½	50-11B	Q13-139	AG-66-Z	AB-76	U-55	Volume
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R1A
C	Switch		Not Req.	76-1	SWB	KB-1	US-26	Attach to R1A

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	TRUETONE PART No.	IRC PART No.	
R2	6000Ω	½	20-602-31		
R3	15KΩ	1	20-153-31	BTS-15K	
R4	4.7Meg	2	20-475-31	BTS-4.7Meg	
R5	100KΩ	½	20-104-31	BTS-100K	Note
R6	10 Meg	½	20-106-31	BTS-10 Meg	

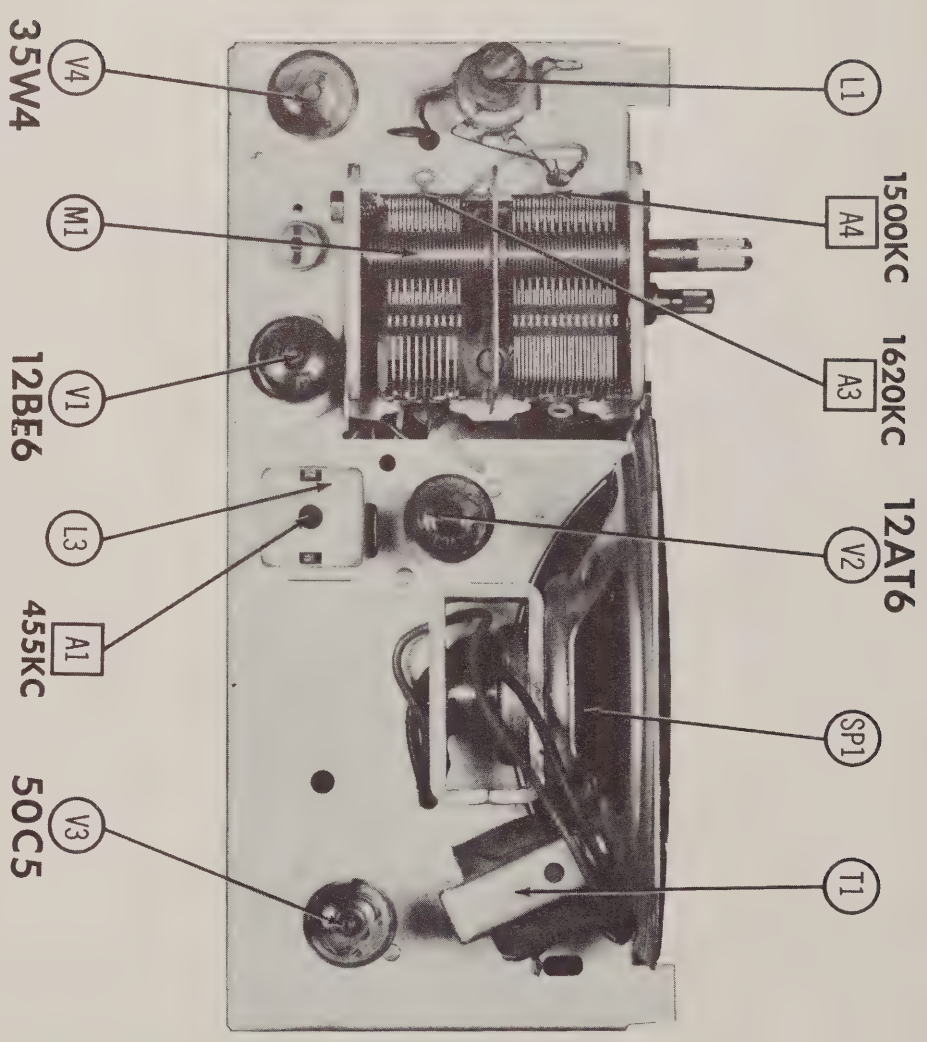
ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	TRUETONE PART No.	IRC PART No.	
R7	330KΩ	½	20-334-31	BTS-330K	
R8	330KΩ	1	20-334-31	BTS-330K	
R9	1500Ω	1	20-152-41	BTA-1500	
R10	22Ω	½	20-220-31		
R11	22Ω	1	20-220-41		

Note . Not used in all models.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		TRUETONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T1	1.94KΩ	3.5Ω	135Ω	.68Ω	Part of Spkr.	A-3332	A-3025	RO-2 ①	S-2X ①	① Drill one new mounting hole.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	TRUETONE PART No.	JENSEN PART No.	QUAM PART No.	
SP1	4"	PM	3.5Ω	80-18A	ST-113 Mod. P4-X	4A07	

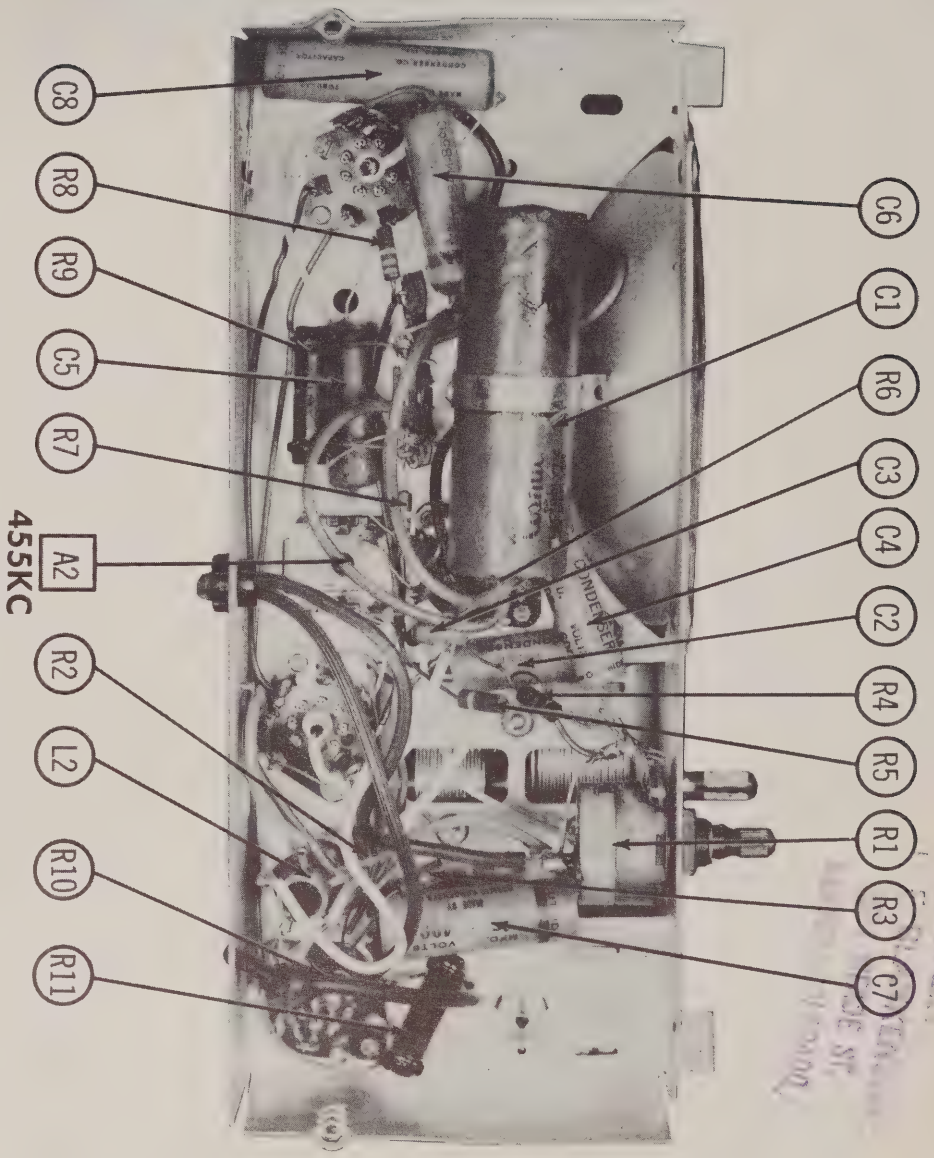
COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	TRUETONE PART No.	MILLER PART No.	
L1	Ant. Coil	75Ω	2.8Ω	62-30		
L2	Osc. Coil	.4Ω	6Ω	60-32		
L3	IF Trans.	19Ω	20Ω	61-14	12-C2	

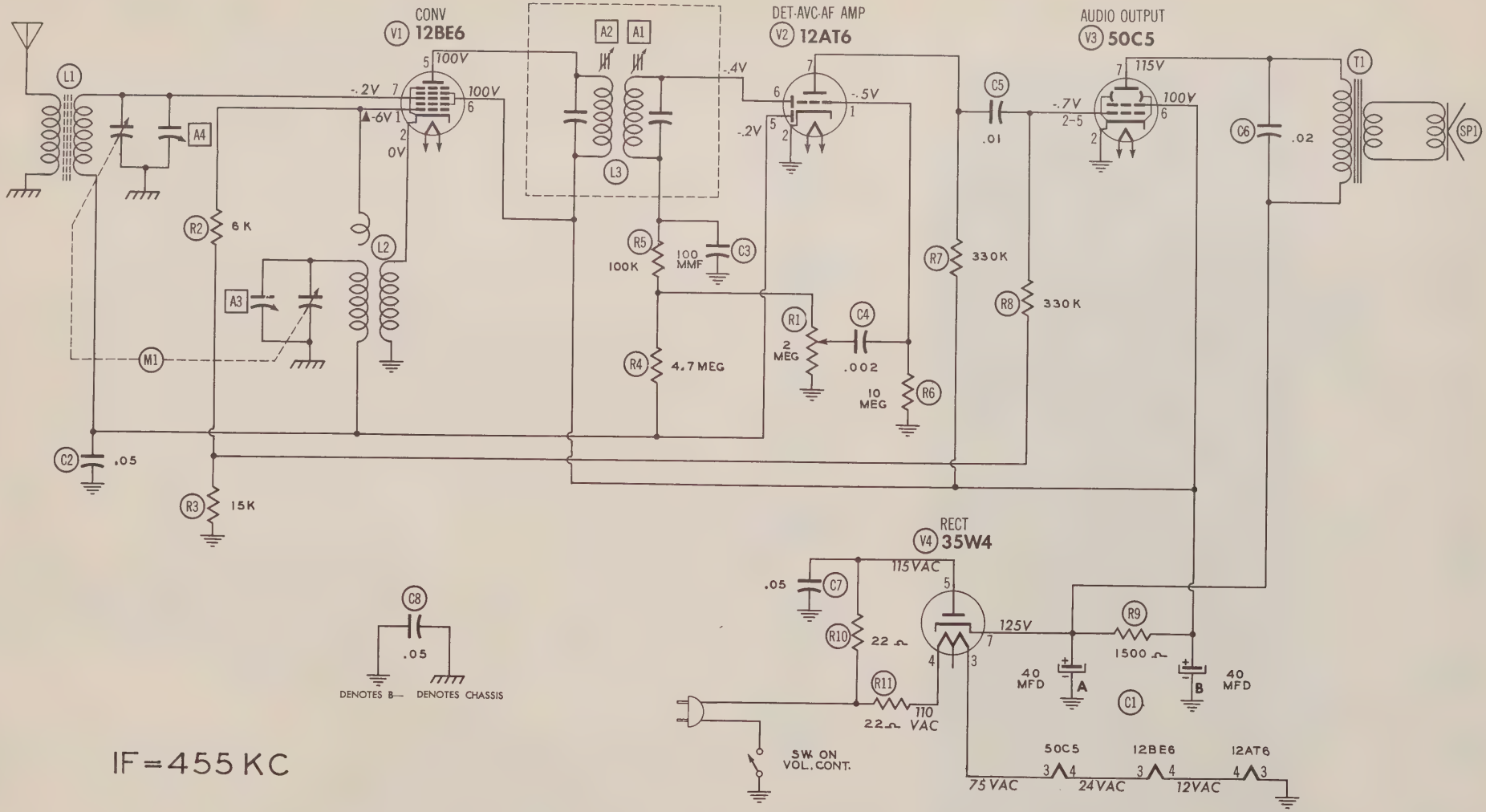
MISCELLANEOUS

ITEM No.	PART NAME	TRUETONE PART No.	NOTES
M1	Tuning Capacitor	30-44	22-453MMF, 31-193MMF
	Cabinet	120-97W	Walnut for model D2108A
	Cabinet	120-97M	Maroon for model D2109A
	Cabinet	120-97S	Sand for model D2109A
	Cabinet	120-97I	Ivory for model D2109A
	Grille	120-98I	Ivory
	Grille	120-98W	Walnut
	Knob	122-25	Tuning
	Knob	122-70	Volume
	Cabinet Back	125-59	

CHASSIS—BOTTOM VIEW



TRUETONE MODELS D-2108A, D-2109A



IF=455 KC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	21KΩ	.4Ω	24Ω	12Ω	†1.5KΩ	†1.5KΩ	6.7Meg
V 2	12AT6	10 Meg	0Ω	0Ω	12Ω	6.7Meg	2 Meg	†330KΩ
V 3	50C5	0Ω	350KΩ	74Ω	24Ω	350KΩ	†1.5KΩ	†135Ω
V 4	35W4	15KΩ	130Ω	74Ω	109Ω	153Ω	100Ω	100KΩ

▲ TAKEN WITH VACUUM TUBE VOLTMETER
† MEASURED FROM PIN 7 OF V4

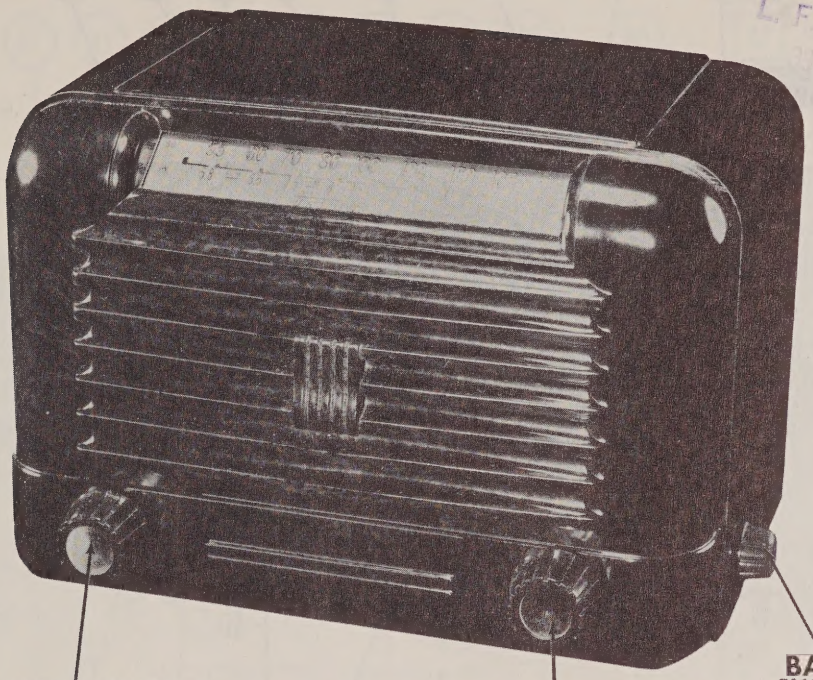
A PHOTOFACT STANDARD NOTATION SCHEMATIC

© Howard W. Sams & Co., Inc. 1953

199-14

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PROPERTY OF
L. F. BLANKENSHIP
3823 MEADE ST.
DENVER, COLORADO



TRUETONE
MODEL D-2383

TRADE NAME	Truetone Model D-2383
SUPPLIER	Western Auto Supply Co., 2107 Grand Ave., Kansas City, Mo.
TYPE SET	AC-DC Operated 2 Band AM Superheterodyne Receiver
TUBES (Five)	Types 12SA7GT Conv., 12SK7GT IF Amp., 12SQ7GT Det-AVC-AF Amp., 50L6GT Audio Output, 35Z5GT Rectifier
POWER SUPPLY	105-125 Volts AC-DC
RATING	.25 Amp @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1650KC
SHORT WAVE	5.8-18.3MC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set dial pointer, turn tuning gang fully closed and set left hand edge of the pointer 1-11/16" from the left hand edge of the dial backplate.
Use isolation transformer if available. If not connect a .1MFD capacitor in series with low side of signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	SCOPE CONNECT	ADJUST	REMARKS
1.	.05MFD	High side to rear stator of tuning gang. Low side to chassis.	455KC	BC	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used reduce dummy antenna to .001MFD to reduce hum modulation.
2.	.05MFD	"	1650KC	BC	"	"	A5	Adjust for maximum output.
3.		Loop	1400KC	BC	Tune for max. signal.	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
4.		Loop	600KC	BC	600KC (2 3/16" from left edge of dial backplate)	"	A7	Adjust for maximum output.
5.	400Ω Carbon Resistor	High side to external antenna lead. Low side to chassis.	18.3MC	SW	Tuning gang fully open.	"	A8	Adjust for maximum output.
6.	400Ω Carbon Resistors	"	16MC	SW	Tune for max. signal.	"	A9	Adjust for maximum output.

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

TRUETONE
MODEL D-2383

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: TRUETONE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	INSTALLATION NOTES
V1	Converter	12SA7GT	12SA7GT	8AD	
V2	IF Amp.	12SK7GT	12SK7GT	8N	
V3	Det.-AVC AF Amp.	12SQ7GT	12SQ7GT	8Q	
V4	Audio Output	50L6GT	50L6GT	7S	
V5	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: TRUETONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	40	150	150-101	PRS150/40-40		EZ5515		2N511	TVA-2445	Red
B	40	150								Green
C2	.05	200	152-104	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C3	.05	200	152-104	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C4	4									Note 1
C5	3900	500		1464-004		1DR5D4		MCB463	MS-24	Note 2
C6	.05	200	152-104	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C7	.05	200	152-104	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C8	.05	200	152-104	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C9	270	500	156-101	1468-0003	D6-271	5W5T3	GP2K-271	MC241	1FM-33	
C10	.0022	600	152-101	P688-0022	D6-222	PTE6D22	GP2-333-222	PT6222	6TM-D22	
C11	270	500	156-101	1468-0003	D6-271	5W5T3	GP2K-271	MC241	1FM-33	
C12	.005	400	152-102	P688-005	DF-503	PTE6D5	GP2-333-502	PT625	6TM-D5	
C13	.02	400	152-103	P288-02	DF-203	PTE4S2		PT412	4TM-S2	
C14	.05	400	152-105	P488-05		PTE4S5		PT415	4TM-S5	

Note 1. Not used in all Models.
Note 2. Some Models use 5000MMF in this application (Part #154-101)

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TRUETONE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	500KΩ	½	52-31	Q13-133	AG-60-Z	B-60-S	U-48	Volume - See Note
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R1A
C	Switch		Not Req.	76-1	SWB	Not Req.	US-26	Attach to R1A

Note: Some models use alternate control (Part No. 120-101).

RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: TRUETONE PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R2	47Ω	½	180-103		
R3	22KΩ	½	180-102	BTS-22K	
R4	68Ω	½	180-104		Note
R5	220KΩ	½	180-105	BTS-220K	
R6	1000Ω	½	180-106	BTS-1000	
R7	2.2Meg	½	180-107	BTS-2.2Meg	

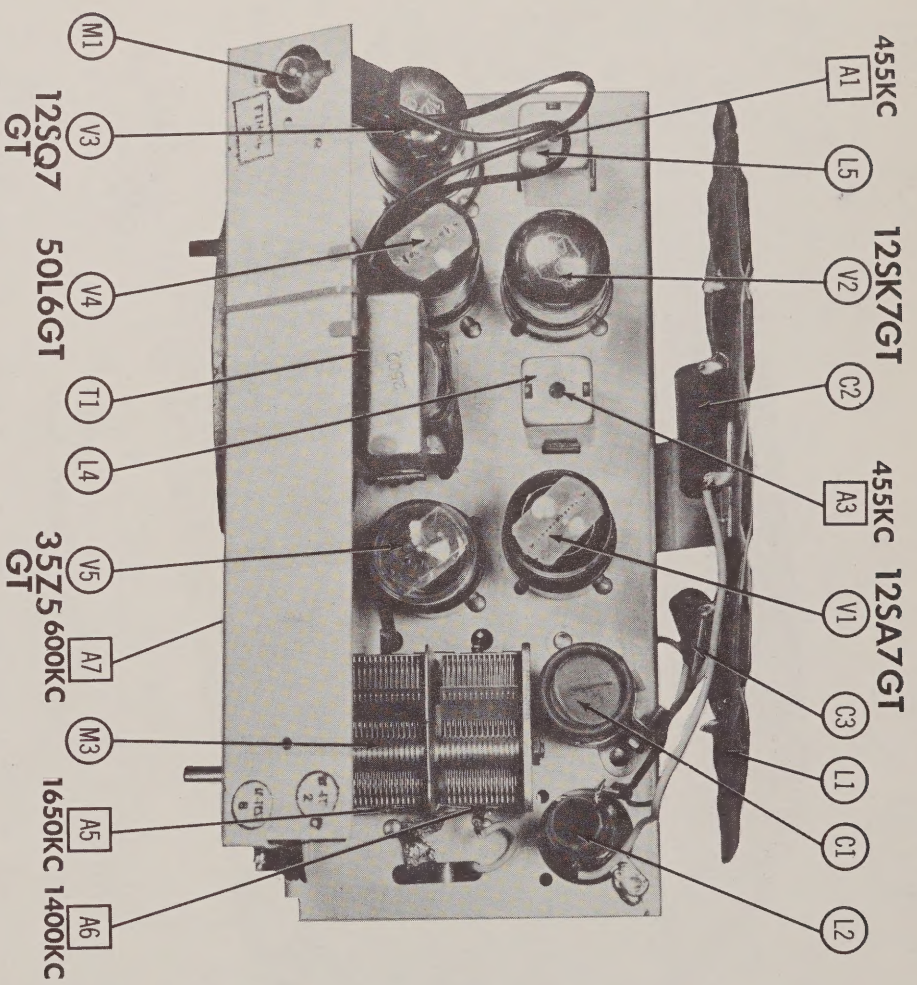
ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: TRUETONE PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R8	10Meg	½	180-108	BTS-10Meg	
R9	330KΩ	½	180-109	BTS-330K	
R10	470KΩ	½	180-110	BTS-470K	
R11	150Ω	½	180-111	BTS-150	
R12	1000Ω	2	180-112	BTB-1000	
R13	22Ω	½	180-113		

Note : Not used in all Models.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: TRUETONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T1	2.38KΩ	3.4Ω	199Ω	.72Ω	Part of Spkr.	A-3876	A-2928	RO-2	S-1X	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	TRUETONE PART No.	JENSEN PART No.	QUAM PART No.	
SP1	5"	PM	3.4Ω	175-101	ST-105 Mod. P5-X	5A07	

COILS (RF-IF)

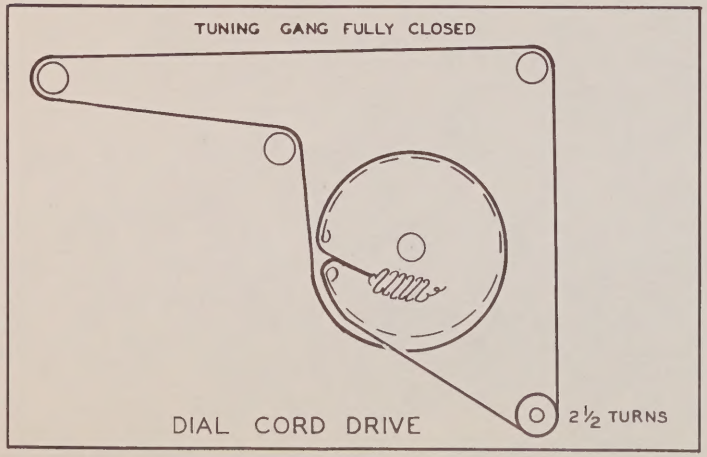
ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	TRUETONE PART No.	MILLER PART No.	
L1	Loop Ant.	.2Ω	2Ω	134-101		
L2	SW Ant. Coil	.3Ω	.2Ω	132-102		
L3A	BC Osc. Coil	5.5Ω		136-103		Tapped @ 4.8Ω
B	SW Osc. Coil	0Ω				Tapped, part of L3A
L4	Input IF	17Ω	17Ω	130-102	12-C1	
L5	Output IF	17Ω	17Ω	130-102	12-C2	

DIAL LIGHTS

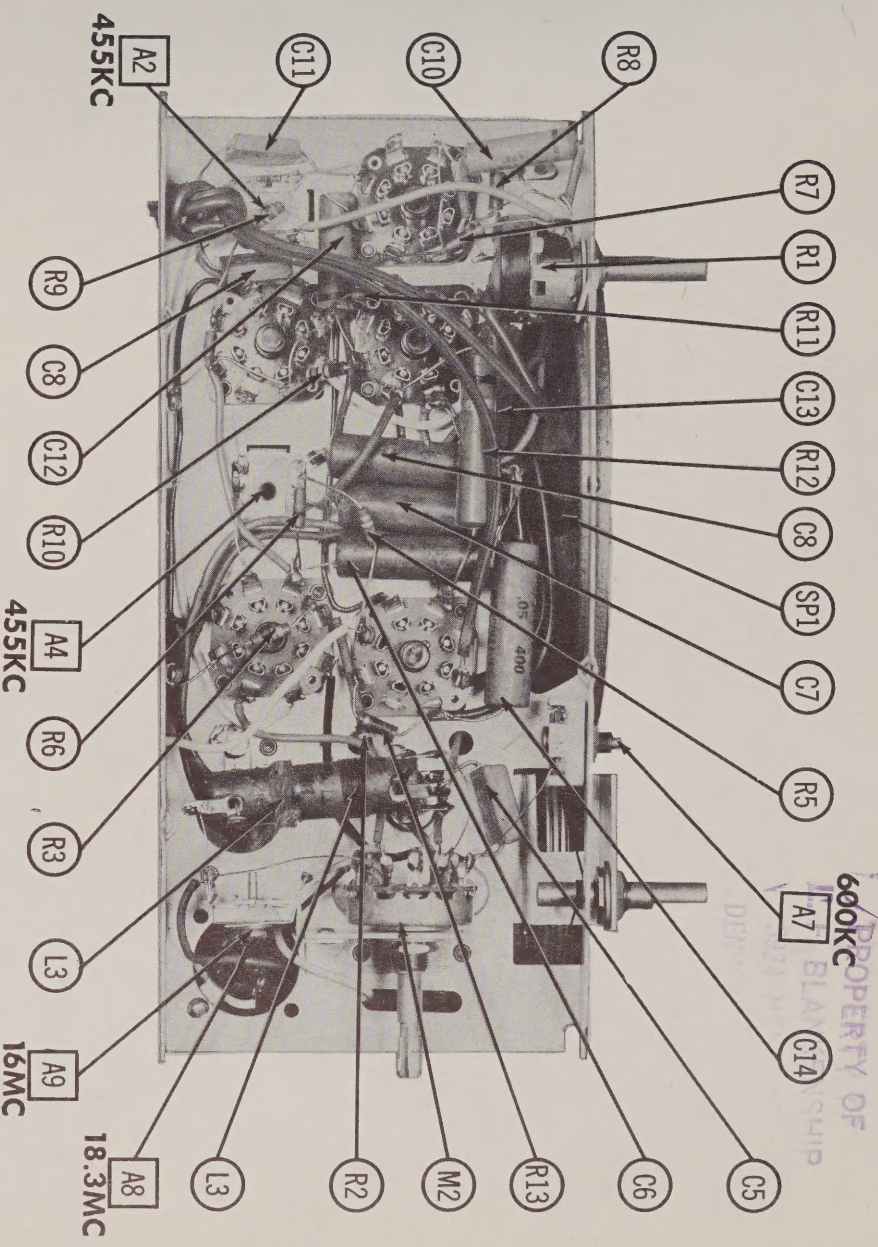
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					TRUETONE PART No.		
M1	Bayonet	6-8	.15	Brown			Type No. 47

MISCELLANEOUS

ITEM No.	PART NAME	TRUETONE PART No.	NOTES
M2	Bandswitch	125-102	
M3	Tuning Capacitor	160-101	30-433MMF, 30-443MMF
A5	Trimmer	164-101	BC Osc.
A8	Trimmer	162-101	SW Osc. (3-30MMF)
A9	Trimmer	162-101	SW Ant. (3-30MMF)
	Cabinet	201-101	Walnut (In shipping carton)
	Dial Pointer	140-104	
	Dial Scale	215-101	
	Knob	220-101	Off/On Volume, Tuning
	Knob	220-102	Band Switch
	Back Cover	225-101	



CHASSIS—BOTTOM VIEW

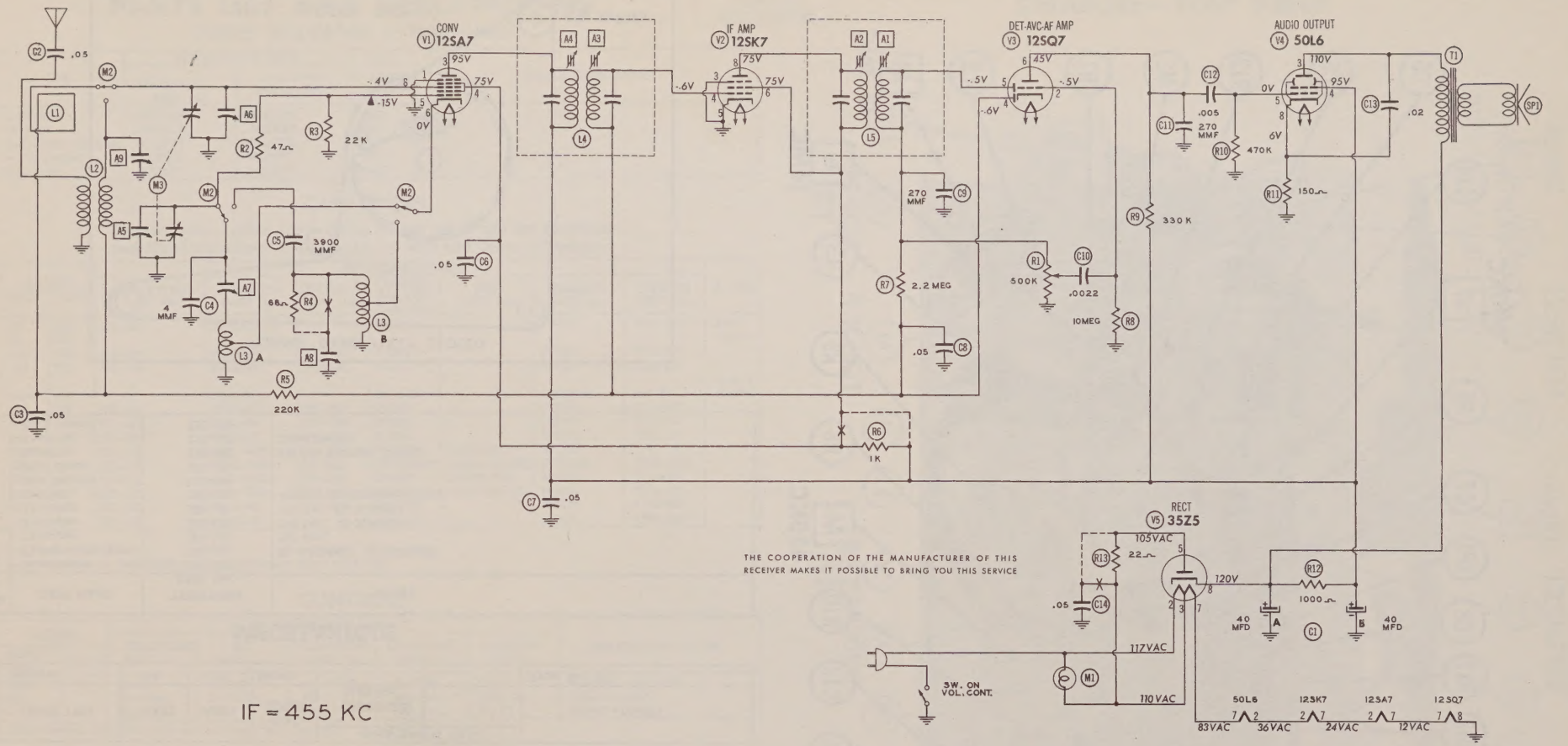


PROPERTY OF

SET 199 FOLDER 15

TRUETONE MODEL D-2383

TRUETONE MODEL D-2383



IF = 455 KC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12SA7GT	0Ω	24Ω	†1KΩ	†2KΩ	22KΩ	.8Ω	12Ω	2.9Meg
V 2	12SK7GT	0Ω	36Ω	0Ω	2.7Meg	0Ω	†2KΩ	24Ω	†2KΩ
V 3	12SQ7GT	0Ω	10 Meg	0Ω	2.7Meg	500KΩ	†330KΩ	12Ω	0Ω
V 4	50L6GT	INF	36Ω	†195Ω	†1KΩ	470KΩ	INF	86Ω	150Ω
V 5	35Z5GT	INF	121Ω	115Ω	INF	137Ω	2.9Meg	86Ω	150KΩ

ALL MEASUREMENTS TAKEN IN BC POSITION ONLY
† MEASURED FROM PIN 8 OF V5
▲ TAKEN WITH VACUUM TUBE VOLTMETER

A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1953

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.